PROCEEDINGS FROM THE

SIXTH

INFORMATION TECHNOLOGY CONFERENCE

NOVEMBER 2 - 3, 1988

PROVINCE OF NEW BRUNSWICK

FREDEDERICTON

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN — NOVEMBER 2-3, 1988

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Organizing Committee:

Lori MacMullen,	Transportation
Ted Hudson,	Alcohol and Drug Dependency Commission
Ron Sisk,	Fisheries and Aquaculture
Robert Ellis,	I. S. D., Supply and Services
André Gauthier,	I. S .D., Supply and Services

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

WELCOME

Lori MacMullen
Manager, Systems Development and Support
Transportation

Conference Chairperson

INFORMATION TECHNOLOGY CONFERENCE

WELCOME

BY LORI MacMULLEN
Conference Chairperson

ON BEHALF OF THE ORGANIZING COMMITTEE, AND THE DEPARTMENT OF SUPPLY AND SERVICES WHICH HOSTS THIS EVENT, I TAKE PLEASURE IN WELCOMING YOU TO THE SIXTH INFORMATION TECHNOLOGY CONFERENCE OF THE GOVERNMENT OF NEW BRUNSWICK. WE ARE DELIGHTED BY SUCH A FINE TURNOUT.

FOR THE PAST THREE YEARS, THIS CONFERENCE HAS EVOLVED FROM ONE OF A HIGHLY TECHNICAL NATURE TO ONE FOCUSSED ON THE INFORMATION GENERATED BY THE TECHNOLOGY. THE THEME OF THE CONFERENCE, INFORMATION IN STRATEGIC MANAGEMENT, REFLECTS THE CHANGE IN ATTITUDE TOWARDS INFORMATION. IT IS BEING RECOGNIZED AS A VITAL AND VALUABLE BUSINESS RESOURCE THAT MUST BE MANAGED AND PLANNED PROPERLY. THE PRESENTATIONS AND DEMOS WILL REFLECT THIS CHANGE IN ATTITUDE AND FOCUS ON THE CRUCIAL ROLE, USES AND VALUES OF INFORMATION IN THE GOVERNMENT.

TO WELCOME YOU ON BEHALF OF THE INFORMATION SYSTEMS DIVISION OF THE DEPARTMENT OF SUPPLY AND SERVICES, I NOW PRESENT TO YOU ITS ASSISTANT DEPUTY MINISTER, MR. JERRIE FOWLER.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

INTRODUCTION TO THE CONFERENCE

Jerrie Fowler
Assistant Deputy Minister
Supply and Services

INFORMATION TECHNOLOGY CONFERENCE

INTRODUCTION TO THE CONFERENCE

BY JERRIE FOWLER
Assistant Deputy Minister
Supply and Services

THANK YOU, LORI. IT IS GRATIFYING TO SEE THE NUMBER OF SENIOR MANAGEMENT PEOPLE HERE AT THIS SIXTH TECHNOLOGY CONFERENCE. AT ONE TIME I THINK I WAS THE ONLY GENERALIST ATTENDING THESE CONFERENCES. WHAT MAKES IT PLEASING, IS THAT, FOR SOME TIME NOW, I HAVE MAINTAINED THAT, FOR TECHNOLOGY TO BE PRODUCTIVE, IT HAS TO BE MANAGEMENT DRIVEN. THAT DOES NOT IN ANY WAY REFLECT ON THE TECHNOCRATS THAT ARE HERE, THAT TECHNOLOGY UP TO THIS POINT HAS BEEN DRIVEN BY THE TECHNICAL RESOURCES. RATHER, I THINK IT REFLECTS THE SLOWNESS IN SENIOR MANAGERS IN RECOGNIZING THE NEED FOR THEM TO BE INVOLVED IN THE DECISION MAKING PROCESS WHEN IT COMES TO TECHNOLOGY.

WHAT THIS FORUM PROVIDES IS AN OPPORTUNITY FOR PEOPLE TO DISCUSS IDEAS AND PERHAPS EVEN TO COMMUNICATE, BECAUSE IN THE PAST THERE MAY HAVE BEEN A COMMUNICATIONS PROBLEM BETWEEN THE TECHNOCRATS AND WE SENIOR MANAGERS. PERHAPS WE HAVE NOT TALKED QUITE THE SAME LANGUAGE. THE SLOWNESS OF SENIOR MANAGERS TO GET INVOLVED IN THE TECHNOLOGY PROBABLY STEMS FROM THE FACT THAT IT IS AN AREA THAT WE ARE NOT QUITE COMFORTABLE WITH. WE ARE ALL COMFORTABLE IN MAKING PROGRAM MANAGEMENT DECISIONS BASED ON YEARS OF EXPERIENCE. TECHNOLOGY ON THE OTHER HAND IS RELATIVELY NEW AND I GUESS MOST SENIOR MANAGERS, INCLUDING MYSELF, QUITE OFTEN FEEL UNEASY MAKING DECISION REFLECTING THE APPROPRIATE USES OF TECHNOLOGY. PART OF THAT HAS COME ALSO FROM OUR GETTING CONFLICTING MESSAGES FROM

TECHNOCRATS, BECAUSE TECHNOLOGY IS NEW, VERY RAPIDLY CHANGING AND SUBJECT TO VARYING OPINIONS. BE LEERY OF THE PERSON WHO HAS THE ANSWER TO EVERYTHING. I THINK ALSO THAT PART OF THE PROBLEM COMES FROM THE FACT THAT THE TECHNOCRATS, SURPRISINGLY ENOUGH, HAVE BEEN SLOW IN ADAPTING TO CHANGING TECHNOLOGY. I AM SURE THAT SOME OF THAT STEMS FROM A NATURAL CONSERVATISM OF WANTING TO SEE THAT APPROPRIATE MEASURES ARE TAKEN IN TERMS OF SECURITY, BACKUP, ACCESS TO DATA, AND ALL THOSE GOOD THINGS. AS WELL, I'M SURE, IT HAS BEEN A FRUSTRATING EXPERIENCE FOR TECHNOCRATS TO SEE USERS MAKING THE SAME MISTAKES THAT THEY HAVE LEARNED, OVER THE YEARS, TO AVOID. YET, ON THE OTHER HAND, MISTAKES ARE JUST PART OF EXPERIMENTATION, OF THE LEARNING PROCESS.

TECHNOCRATS ARE NO LONGER EXCLUSIVE TO THE INFORMATION SYSTEMS DIVISION. THERE ARE NOW A GREAT NUMBER OF THEM IN THE DEPARTMENTAL WORLD. THEY TEND TO COME ON ONE HAND FROM THE CENTRAL GROUP, FROM I. S. D. AS SUCH THEY TAKE A LOT OF THE VALUES WITH THEM, AND I FIND IT AMUSING THAT THEY SHOULD IMMEDIATELY WANT TO CENTRALIZE EVERYTHING WITHIN THE DEPARTMENT AND NOT LET THE END USERS DO ANYTHING WITH TECHNOLOGY. THIS TOO BECOMES UNPRODUCTIVE, AND VIEWED BY THE END USER AS ONLY ANOTHER LEVEL OF BUREAUCRACY. IT IS BAD ENOUGH HAVE TO DEAL WITH THE PREFERENCES OF THE CENTRAL GROUP WITHOUT HAVING TO GO THROUGH ANOTHER LAYER WITHIN ONE'S OWN DEPARTMENT.

I'M NOT SURE THE TECHNOCRATS WHO ARE THE SELF-TAUGHT PROGRAM MANAGERS WHO HAVE LEARNED TO USE TECHNOLOGY HAVE BEEN TOTALLY DIFFERENT IN THAT REGARD. IN FACT MANY OF THEM, I THINK, HAVE AVOIDED GOING TO ADVICE AND ASSISTANCE FROM PEOPLE WHO MIGHT HAVE HELPED

THEM CONSIDERABLY. AND HAVE PREFERRED TO LEARN BY TRIAL AND ERROR, RATHER THAN USE THE SERVICES OF PEOPLE WHO ARE CONSIDERED THE PROFESSIONALS IN THIS AREA.

WE SENIOR MANAGERS ARE NOT WITHOUT BLAME EITHER IN THIS WHOLE EXERCISE. WE HAVE IN SOME CASES DISREGARDED THE FUNDAMENTAL PRINCIPLES AND PRACTICES OF GOOD MANAGEMENT WHEN ADDRESSING THE USE OF TECHNOLOGY. WE HAVE ALL HEARD OF THE TRADITIONAL EXAMPLE WHERE WE HAVE PURCHASED HARDWARE AND THEN GONE OUT TO BUY THE SOFTWARE TO FIT, THEN LOOKED AROUND FOR PROBLEMS TO SOLVE. THIS IS QUITE THE REVERSE OF DEFINING THE PROBLEM FIRST, AND THEN APPLYING THE MOST APPROPRIATE TECHNOLOGY AS THE CORRECT SOLUTION. IN THE APPLICATION DEVELOPMENT FIELD, IT HAS NOT BEEN MUCH DIFFERENT.

NONE OF US, I'M SURE, WOULD POUR THE FOUNDATION OF A HOUSE WITHOUT KNOWING WHAT SIZE HOUSE IS GOING TO BE, OR ASK AN ENGINEER TO BUILD A BRIDGE WITHOUT KNOWING HOW WIDE OR DEEP THE RIVER IS, OR HOW MANY LANES OF TRAFFIC ARE REQUIRED. YET SEEMINGLY WHEN IT COMES TO INFORMATION SYSTEMS APPLICATIONS, WE'VE ALL DONE THAT AND THEN BLAME THE TECHNOCRATS FOR THE POOR RESULTS.

THE QUESTION WE MUST ASK NOW IS 'WHERE DO WE GO FROM HERE?', AND I THINK THERE ARE A NUMBER OF THINGS WE HAVE TO DO. ONE IS THAT WE HAVE TO BUILD A COOPERATIVE ATTITUDE AMONG THE CENTRAL GROUP AND THE DEPARTMENTS IN DEVELOPING POLICY AND GUIDELINES WHICH IMPACT THE USE OF TECHNOLOGY. WE HAVE TO START LOOKING AT HOW WE MARRY SOME OF SOME THESE TECHNOLOGIES, WHICH WILL BECOME EFFECTIVE ONLY WHEN WE CAN EASILY MOVE INFORMATION BACK AND FORTH ACROSS THE ORGANIZATION

TO GIVE PROGRAM MANAGERS EASY ACCESS TO THE INFORMATION THEY NEED TO DO THEIR JOB. THOSE WHO DON'T NEED THE INFORMATION SHOULD NOT OF COURSE HAVE THAT ACCESS FOR SECURITY REASONS.

THESE ARE SOME OF THE ISSUES, I FEEL, WE HAVE TO LOOK AT AND WE WILL NEED THE TOTAL INVOLVEMENT OF NOT ONLY THE TECHNOCRATS OF THE ORGANIZATION BUT ALSO THE PARTICIPATION OF THE SENIOR MANAGEMENT PEOPLE. THERE IS FURTHER EVIDENCE OF MANAGEMENT'S CONCERN IN THIS WHOLE AREA IS REFLECTED BY APPOINTMENT OF A DEPUTY MINISTER GROUP TO A TECHNOLOGY STEERING COMMITTEE, AND ONE OF THE FIRST DECISION MADE BY THIS GROUP WAS THE SELECTION OF THE CHIEF INFORMATION RESOURCES OFFICER. FOR THOSE OF YOU WHO ARE NOT AWARE, THIS INDIVIDUAL IS GERRY HENRY.

I AM GOING TO TURN YOU NOW OVER TO GERRY WHO WILL TALK TO YOU ABOUT HIS ROLE IN THE AREA OF POLICY MAKING AS WELL AS THE FRAMEWORK OF THE POLICY WHICH HAS BEEN APPROVED BY THE STEERING COMMITTEE.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

INFORMATION TECHNOLOGY STRATEGIC DIRECTION AND POLICY FRAMEWORK

GERALD HENRY
Director
Chief Information Resource Office
Board of Management

INFORMATION TECHNOLOGY CONFERENCE

INFORMATION TECHNOLOGY STRATEGIC DIRECTION AND POLICY FRAMEWORK

BY GERALD HENRY, Director
Chief Information Resource Office
Board of Management

I NOTE THAT LORI SET THE STAGE THAT THE THEME OF THIS CONFERENCE HAD TO DO WITH TREATING INFORMATION AS A STRATEGIC RESOURCE. MANY SENIOR LEVEL PEOPLE OF THIS GOVERNMENT HAVE UNDERSTOOD THAT, AND AS A RESULT WE NOW HAVE AN INFORMATION TECHNOLOGY STRATEGY.

THE AGENDA SAYS THAT I'M GOING TO TALK ABOUT THE STRATEGIC DIRECTION AND POLICY FRAMEWORK. I'M NOT GOING TO SAY MUCH ABOUT POLICY BECAUSE WE HAVE NOT GOT MUCH OF THAT UNDERWAY YET. WHAT WE DO HAVE IS A STRATEGY WHICH SETS THE STAGE TO DEVELOP SOME POLICIES AND PROCEDURES WHICH WILL HELP US MAKE BETTER USE OF INFORMATION.

USING THE SLIDES WHICH FOLLOW, I WOULD LIKE TO STEP YOU THOUGH, IN POINT FORM, WHERE WE HAVE COME FROM, WHERE WE ARE, WHAT DIRECTION WE ARE ENCOURAGING WITH REGARD TO USES OF INFORMATION, AND ULTIMATELY WHAT OUR AIMS ARE.

INFORMATION

TECHNOLOGY

STRATEGY

Research and Planning Overhead 88-18

INFORMATION TECHNOLOGY STRATEGY

OBJECTIVES

1. Establish an Information Management Framework which will effectively support decision-making at the operational, tactical and Strategic levels throughout the Government.

2. Increase decentralized delivery of Government services and improve centralized quality assurance, through better information support.

3. Help improve selection and evaluation of Government Programs.

4. Help improve the efficiency and effectiveness of:

   - Government Program delivery, in both official languages

   - Management of natural resources

5. Enhance the responsibility and accountability of Program managers with respect to the management of information.

Objectives (continued):

6. Rationalize the management of the Information Technologies throughout the Government:

   - to ensure the coherence, effectiveness and cost efficiency of the central and departmental hardware / software infrastructures;

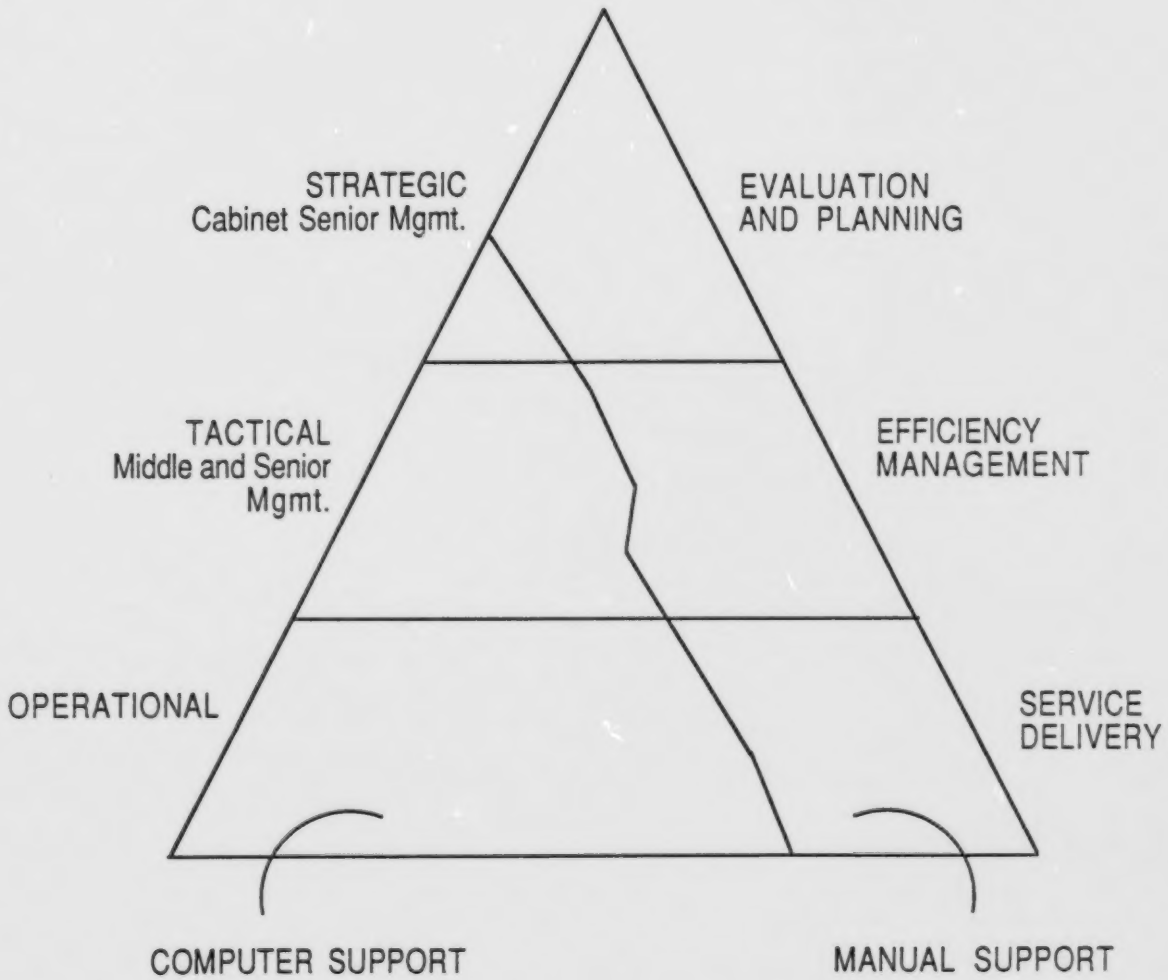
   - to improve significantly the efficiency of the systems development function in the Government; and

   - to make all departments effective producers and users of information

7. Attain an optimal balance between centralization and decentralization in the management of the Information Technologies.

8. Encourage the development of New Brunswick technology and human resources.

HIERARCHY OF INFORMATION TECHNOLOGY APPLICATION



RESEARCH AND PLANNING BRANCH
OVERHEAD 88-1

INFORMATION TECHNOLOGY STRATEGY

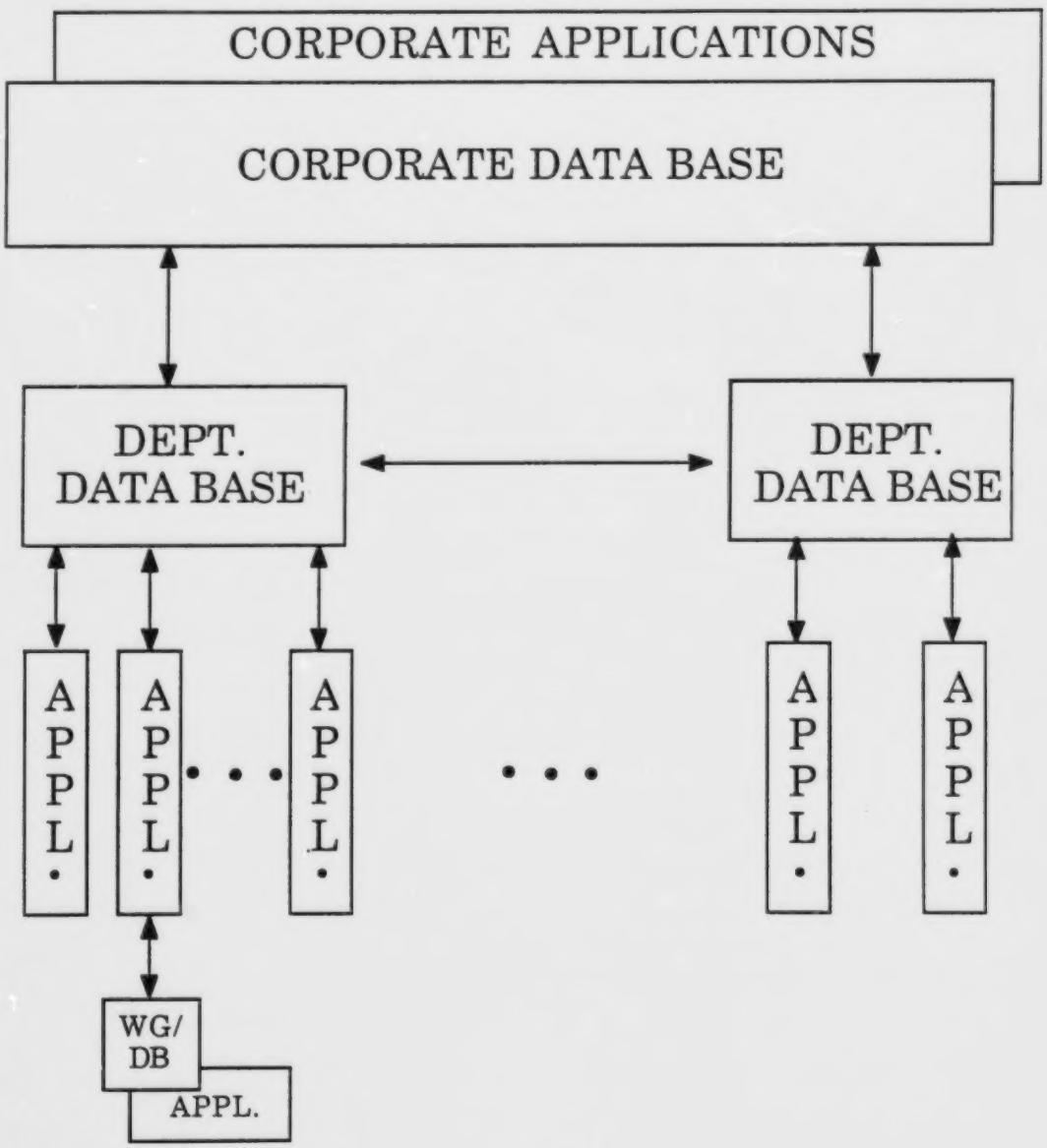
DATA

SHARING

Research and Planning Overhead 88-19

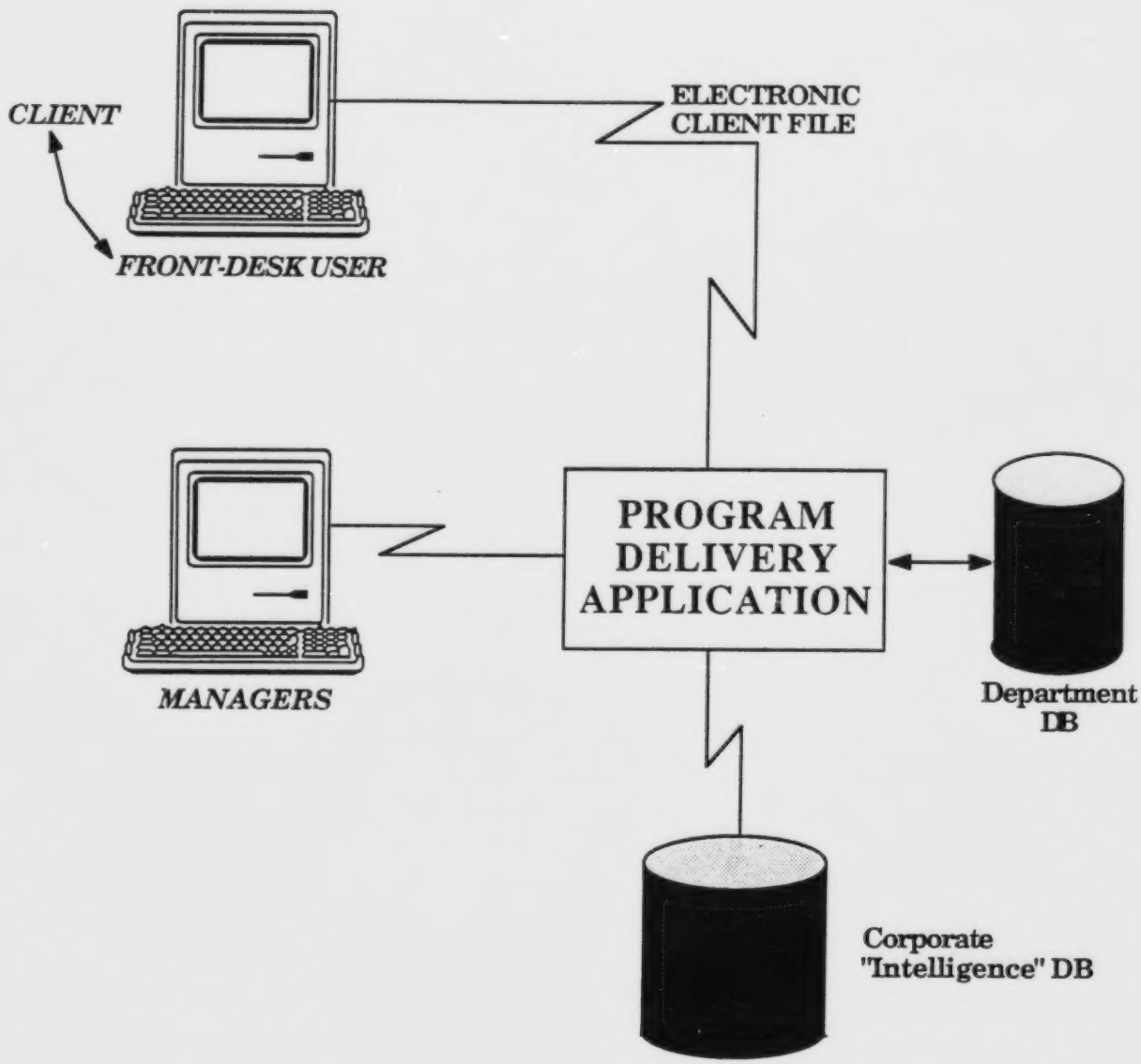
OVERALL ARCHITECTURE

(APPLICATIONS AND DATA BASES)

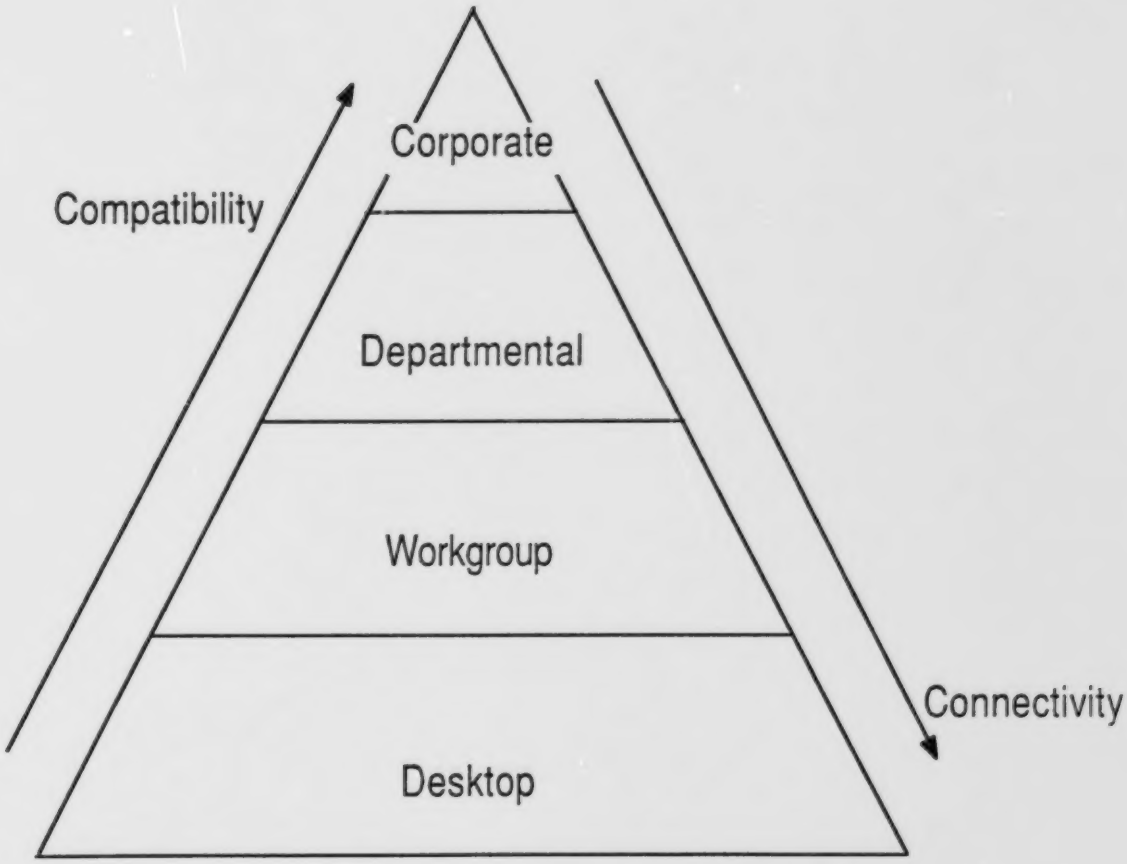


OVERALL APPLICATION ARCHITECTURE

(ONLINE PROGRAM DELIVERY SYSTEMS)



EQUIPMENT HIERARCHY



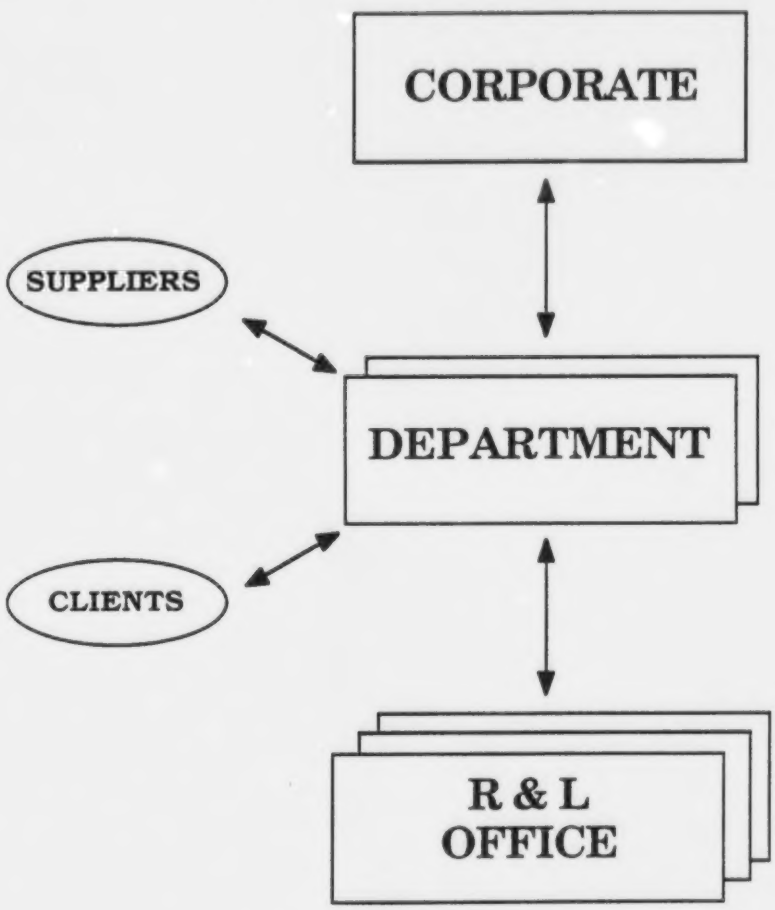
HIERARCHY

LONG-TERM STRATEGY

Four level hierarchy

- Corporate processors for Corporate data and applications.
- Departmental processors for departmental applications and data.
- Workgroup systems for Office Systems and optionally workgroup applications and data.
- Desktop systems for personal applications, personal assist functions and personal data
- Connectivity facilities for accessing the four levels.

DATA BASE HIERARCHY



★ LEGAL ENTITY DB
★ RESIDENT ID DB
★ GIS DB

★ RESOURCE MGMT
★ MGMT AGGREGATES
(Define now; implement later

★ PROGRAM MGMT DB
★ GIS OVERLAYS
★ WORKGROUP DB

★ WORKGROUP DB

Research And Planning Branch
Overhead 88-4

SYSTEMS HIERARCHY

DEFINITIONS

Corporate
- systems applicable across all ministries
- processing environment available to all ministries

Departmental
- pertaining to a particular ministry or government department
- processing environment available to all offices of one department

Workgroup
- systems applicable to needs of a group or team
- local processing environment

Desktop
- systems supporting an individual's needs
- processor available to that individual *only*

STANDARDS

Long-Term

- Adopt international standards for government systems:
  - Inter-processor connectivity (OSI)
  - Document content (ODA)
  - Electronic mail (X.400)
  - Information interchange (ODIF)
  - Etc.

In the meantime . . .

- Adopt de-facto standards
  - Inter-vendor connectivity
  - Document exchange
  - Document content
  - Electronic mail
- Vendor qualification should include mandatory requirement to comply with international standards (by 1990)

COMMUNICATIONS

Provincial Network

- Pursue long-term objective of "Open Network"

Electronic Mail

- Study the feasibility of a government-wide E-mail facility for inter-departmental communications.

  - merits
  - options
  - impact on all departments
  - as part of Open Network services

COMMUNICATIONS

Cabling

- Continue progress towards twisted-pair cabling of buildings
- Investigate how it can support LANs

Local Area Networks (LANs)

- Expand on guidelines for the use of LANs for workgroup systems

DEVELOPMENT ENVIRONMENT

Objectives

- Environment to improve productivity
- Ensure quality systems

Components

Automated tools to structure, standardize and support the development team.

- Development Guide
- Development tools (software)
- Standards:
  - user interface
  - programming
  - reusable code
  - etc.

DEVELOPMENT ENVIRONMENT

Corporate

- Adopt and implement a government-wide development guide
- Identify tools to be provided by the corporate environment:
  - Programming tools
  - DBMS
  - Dictionary
  - Modeling tool
  - 4th generation language
  - etc.
- Assist departments in identification of tools for their environments.

Departments

- Adhere to government development guide
- Identify tools for the departmental current and planned processing environment.

Technology Strategy

Strategy Highlights

- **Develop and adopt common references to data within three major information requirement areas:**
  - **geographic locations**
  - **enterprises**
  - **residents**

- **Establish a hierarchy of data and applications, as follows:**
  - **government-wide**
  - **department/program**
  - **service/region**
  - **work unit/personal**

- **Adopt a technology architecture to support the hierarchy of data, applications and users:**
  - **hardware/software**
  - **networking**
  - **support services**

Technology Strategy

Strategy Highlights (cont.)

- Establish an administrative structure to support and implement this strategy:
  - central senior management function
  - procedures for planning and control
  - standards

HOW TO ACCOMPLISH

- Deputy Minister Steering Committee
- Corporate Information Resource Office
- Policies and Procedures
- Guidelines and Standards
- Compatible technologies
- Consensus and Agreement
- Information Resource Planning

PROGRESS TO DATE

- Strategy adopted
- Deputy Minister Steering Committee
- Corporate Information Resource Officer
- Communications Network Specifications
- RFP issued and proposals received
- First draft of a framework policy in consultation process
- Geographic Information Standards Project
- Geographic Information Policy drafted and under consideration

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

DEPUTY MINISTERS' EXECUTIVE COMMENTARY PANEL

Ernest L. MacKinnon, Board of Management
Max C. Lewis, Supply and Services
Mavis Hurley, Income Assistance
Robert Saintonge, Agriculture
John Roushorne, Labour

Moderated by
Robert McCulloch
Executive Programs Director
D M R Group

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE COMMENTARY

ERNEST L. MacKINNON
Secretary of
Board of Management

INFORMATION TECHNOLOGY CONFERENCE

EXECUTIVE COMMENTARY

Ernest L. MacKinnon

TEXT NOT AVAILABLE AT TIME OF PUBLICATION

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE COMMENTARY

MAX C. LEWIS
Deputy Minister
Supply and Services

INFORMATION TECHNOLOGY CONFERENCE

PANEL COMMENTARY COMMENTS

MAX C. LEWIS
Deputy Minister
Supply and Services

It is a pleausre to host this Conference, the second one I have been involved in, and like the previous one, this one appears well planned and includes some very timely topics. I am very pleased with the participation and attendance of my colleagues and other senior managers, as this is essential to the success of any Information System strategy.

I believe a number of positive things are happening related to information systems:

- The decision to proceed with a strategy ;
- The appointment of a CIRO ;
- The active participation of a number of deputy ministers on the Information Technology Steering Committee ;
- Also, strategic planning exercises which have either been completed, are in progress, or are being planned by a number of Departments.

A Corporate strategy is obviously is obviously very important, and it is ecoouraging to see positive steps in that direction. Such a strategy is essential to efficient management of the corporate information resource. However, in a structure such as ours, I believe there are a number of ponts we must keep in mind or the strategy, even if successful, will not be effective.

Successful use of information technology, while supported by the strategy and central corporate systems and expertise, depends on planning and implementation at the department level, particularly as it relates to delivery of service. No strategy can assure this.

We must ensure that the strategy evolves properly, driven primarily by changes in technology and continuing evaluation of the most effective means to utilize evolving technology.

We must ensure that we take an objective, results-oriented business case approach to the use of I. S. technology. scarce resources must be applied first to the areas with the greatest potential gains. From a corporate perspective, this means we must have an outlook of directly addressing the use technology in parts II and III of the public service, where we incur 50% of our total operating costs and increases.

Finally, we must, in developing strategic departmental plans, give increased attention to the use of information technology at the delivery of service level, e.g. health, education, translation...

The role of the Department of Supply and Services in these corporate goals is one of providing appropriate evolving corporate services related to information technology, including corporate systems services, strategic planning services, corporate data center services, as well as providing a center of expertise in the use of Information System technology. We plan to study and recommend strategic corporate policy, and market corporate expertise, support and advice to departments.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE COMMENTARY

MAVIS HURLEY
Deputy Minister
Income Assistance

REMARKS BY MAVIS HURLEY AT I.S. TECHNOLOGY CONFERENCE

1. Information for Executive Management.

The Department makes some 40,000 payments to "cases" (more or less = families), individuals and vendors broadly on a monthly cycle, using a set of three linked financial computer systems and one standalone system. What we do not have, and do not want, is a terminal on each executive's desk such that they could have direct access to the data base. Given the volume in them, the amount of detail would be overwhelming.

What executives need is a selected summary of useful information, presented both graphically as well as in numerical tables. They want this information upgraded as often as it changes significantly. One good way to find out what an executive really needs is to ask the person to pretend that they have been away from their desk for several weeks on some emergency, and then to get them to say what are the first six items of information they would ask for on their return. At the least, this old analyst's trick will get the dialogue going.

In the case of DIA, with its monthly payment cycle, we have designed our own EIS ("Executive Information System") in the form of a set of four briefing books for each of the four members of the Executive Committee. The books are updated monthly by the Systems section, using data extracted from regular computer runs which are designed to occur as part of the payment process. The books are a handy size, so that I can take them to meetings - you can't do that with a computer terminal. The books contain detailed statistics from the current month, plus a set of time series of the year to date compared to the previous year, all shown as multi color graphs. We use a plotter to produce these, and advise that the monthly time on the plotter is a bottleneck - don't try to do too much this way. Executive information is for executives, not for every employee.

In conclusion, what I am proposing, based on DIA's experience, is that a good initial step for keeping senior management briefed in any department, is to take what information sources you have (in-house computer systems, Statscan data, manual), examine them for relevance by asking executives what they want, and then pre-process it for them on a monthly basis. An "on-line" computer system may not be needed at all, and the cost can be negligible. This is all low tech, soft touch, quick and effective. Go to it, and have fun.

2. Downloading data from mainframe to micros for subsequent manipulation.

In DIA, we think that the mainframe environment is well suited to the bulk production of vary large reports which require lots of fast print capacity, and which contain data from the very latest transaction at the level of complete client detail. In DIA we use the mainframe to produce the bulk daily and monthly reports for our 21 field offices. We have, however, identified that many reports have different characteristics from these, and you don't need a mainframe computer to do single user report generation which manipulates data which is no longer going to be updated.

We have for many years been writing extracts of our mainframe data bases, for subsequent report creation on the mainframe using the package "EXTRACTO". We have recently begun to expand that practice by converting both our existing extract files to micro computer media, and by designing new extract files to be handled the same way. Since EXTRACTO is now available in a micro version, systems staff skills will be able to be transferred across machine boundaries without the barriers caused by the need to learn new skills.

To permit this to work, we have had to buy new and fast micro computers, and to configure them with laser printers for speed and quality, and a variety of high capacity mass storage to hold all that data safely and permanently.

We have now moved to a position of partnership between mainframe and micro, which is most effective. Here is a partial list of the advantages we see.

2.1 In some circumstances, quicker report production. In most circumstances, lower costs. In many circumstances, skills cross machine boundaries, so we are "environment neutral", and can do the work where it is appropriate.

2.2 Ability to design completely new historical time series reports by merging several mainframe extracts. Potential ability to partially to re-create at will a mainframe data base as it was at a particular point in time.

2.3 No need ever completely to lose data - once purged from the mainframe data base, it can remain in computable form indefinitely on micro bases removable mass storage (e.g. WORM platters, Bernoulli and/or tape cartridges). A purged mainframe data base usually leads to lower operational costs, which help to pay for the new micro computer equipment.

2.4 New micro media may offer better data integrity than mainframe tapes (non-magnetic media means safer data storage).

2.5 Ability to create new views of the data which would be impossible on the mainframe without several major system development efforts. For example, in theory we could take data on payments to individuals and cases (groups) from several data bases (perhaps not all from the same department), and write completely new payment histories at the individual client level. By this means, we could for the first time have a complete picture of the way several programs impact a given resident. While probably impractical if done on a production basis for all clients, such an idea presents interesting research possibilities, and may be important in our current world of new programs which cross conventional departmental boundaries.

And here are some of the disadvantages and risks.

A. Need to buy the very best and fastest new micros and accessories, as already mentioned.

B. Need to design and maintain procedures in an end user environment for data retention and backup which are as rigorous as those now associated with mainframe media management.

C. The end user tools for report generation (e.g. EXTRACTO) may be quite inadequate for the creation of major new data views. End users attempting major things on large micros may find themselves facing a steep learning curve on fully competent programming languages.

D. The existing micro computer operating system environment was not designed to handle very large (mainframe size) files.

E. Procedures for direct download to a micro acting as a terminal were not designed with very large files in mind. Procedures for converting mainframe tapes to micro media do not appear to be as robust as they should be. In summary, the integrity of the mainframe to micro data transfer process is still suspect.

3. Support of new programs.

I will end by making one simple but apparently very challenging point to information systems professionals generally. Your traditional methodologies of systems development assume in all innocence that users really do know what they want in the way of new systems to support their new programs. May I ask you - what if they do not, and can not? I put it to you that there is a need for systems people to be prepared to put a skeleton of a program support system in place early, before the program being supported is clean and stable. The important feature of such an early system, is that it is designed so that the system can continue to evolve along with the program. As systems professionals, you must be prepared to stumble along with us into the dark. Don't wait for program stability, for by then the program may have come to the end of its life.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE COMMENTARY

ROBERT SAINTONGE
Deputy Minister
Agriculture

INFORMATION TECHNOLOGY CONFERENCE

EXECUTIVE COMMENTARY

OPENING STATEMENT

Robert Saintonge, Deputy Minister

Department of Agriculture

The Department of Agriculture has recently completed an Integrated Information Systems Plan, the first study of its type undertaken by a New Brunswick Government Department. The plan has been accepted by Board of Management, and we have begun implementation of the recommendations.

Background

For the past few years, senior management at the Department was aware that we were not using computer technology to full advantage. Individual branches had addressed a number of specific problems with varying amounts of success, but the information was still not available to senior management in a timely fashion. Simple requests would take an hour; and a more complex question might not be answered for days.

There was great discrepancies in the level of automation among different branches. Some were using minicomputers, some were using Department of Supply and Services mainframes, others used microcomputers, or no computers at all. There was much duplication of effort and little sharing of information. The Department owns four different minicomputers, and five incompatible types of microcomputers.

Several attempts were made to improve the use of computers. Consultants had been hired several times to make recommendations on computers. Each of these studies addressed a part of the problems but none took a total view of the needs or opportunities.

The problem came to a head in 1987. We had not solved our problems; we had no funds available in our regular budget, and could no get additional funding through our regular channels. We had only one more avenue to explore; the Agri-Food Sub-Agreement. This is a federal-provincial agreement that provides financial support to the industry in New Brunswick. The agreement also provides some funding to the Department to assist our work in helping the industry. We therefore submitted a request to the management committee of the sub-agreement. The request was approved; we had achieved our first objective.

Planning Study

We then invited submissions for the study; the Information Systems Division of Supply and Services was selected. They recommended a full scale study to produce an Integrated Information Systems Plan. With funding from the sub-agreement, we undertook a six month study which began in January 1988. The study team consisted of four people from Supply and Services and one from our Department. The team interviewed 54 staff members from all branches in the Department, from senior management including the Minister and myself, to directors, managers, technicians, and support staff. Presentations were made to management and the steering committee on a regular basis throughout the project, and the final reports were delivered in June.

The Results

The project team developed a target environment for computers for the Department and made 55 recommendations for systems, hardware, personnel, and policies that would meet the operational and management information needs of the

department. The plan represents a practical target that can be attained with state-of-the-art tools that are available today. The plan recognizes the investment we have made in computers in the past and will use those machines as effectively as possible. The action plan is organized into a series of short projects that should be easy to manage, and will produce usable results each step of the way.

This planning study did more than just produce 200 pages of reports. The co-operative mix of team members, the wide ranging interview schedule, and frequent feedback sessions have done more. Management now has a consistent view of our information needs and solutions to those needs. There is wide consensus and support for the recommendations within the Department, which will improve the chances of successful implementation. There is a feeling among staff that this report is different and this time things are going to happen.

Immediate Plans

We have started implementation by hiring an I.S. Coordinator, and addressing some of the immediate needs for microcomputer workstations. We will begin building prototypes of the important management information systems within the next month.

Funding, as always, presents a problem. Our Department has a very small budget for computers systems; we do not have the option of just redirecting funds in line with the new recommendations. We must find new funding to meet our 3 year target for implementation. Without that funding, we would face a longer term implementation, we would risk losing our momentum, and the ultimate cost would be much higher.

The Department is fully committed to this plan and to the implementation of its recommendations. We are confident of its success, and given the directions stated by Gerry Henry earlier this morning, we are hopeful of Board of Management support.

One word of advice, do not work in isolation; work as a team; prepare a comprehensive plan; stop talking about it, do it. We need a corporate system in place within the next 5 to 10 years.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE COMMENTARY

JOHN ROUSHORNE
Deputy Minister
Labour

INFORMATION TECHNOLOGY CONFERENCE
November 2, 1988

JOHN ROUSHORNE
Labour

Speaking Notes

- in the beginning:

$60,000 budgeted for central data processing converted with T.B. approval to purchase one HP 3000/series 40, a couple of terminals and a printer.

- today:

the Department has in service

3 small minis
1 large mini (roughly the same horsepower as an IBM4381)
21 printers-17 of which are laserjets or paintjets
11 IBM PS/2s or equivalents
and over 100 terminals, most of which are HP 150 micros which for the past two years or more we have been purchasing used for 7-800 Canadian all inclusive

We also have acquired the necessary adjuncts such as tape drives, disk drives, plotters and scanners as well as two modems and two varieties of switches which seem to give us the capacity to communicate with just about anything in one form or another, including a growing number of our Regional Offices through DataPac. This process is much lower than I would desire as, like all of you I'm sure, we lack the resources, both human and $ to do those things which we believe need to be done.

The original $60K has remained in our budget as CSL and has been the foundation upon which acquisitions to our central facility have been based over the years. I believe it's fair to observe that if we had not had access to that initial infusion of equipment money we would never have gotten off the ground in computer utilization-we simply would not have had the appreciation of the benefits without experiencing them, which would have motivated us to make the sacrifices in other areas that computerization from scratch would have required.

Many of our peripherals such as micros and printers, however, have not been purchased centrally, but from funds budgeted in the operating divisions. We began with an operating philosophy that the end user would pay for costs of their equipment and demands placed upon the central facility (both equipment and human resources), and to a very great extent this approach is unchanged today.

You may find it interesting that with the exception of one ancient modem, which had been kicking around since 1981 and was discarded this year, everything we have acquired in connection with our computers is still in operation.

All well and good! The Department of Labour has a pile of fancy electronic gadgetry, but what does it accomplish? From the perspective of the Deputy Minister, it gives my office, and indeed every involved manager and professional, ready access to program data in virtually every significant area of Departmental activity. It thus enables us to respond efficiently to requests for information, emanating from the government, client groups or the general public, in areas as diverse as job creation, labour relations, and technical inspections. It has enabled us to vastly expand both the scope and the nature of the services we are offering to the public in many of our programs without seeking additional resources, and it has generated significant efficiencies and enhanced the productive output of virtually every employee in Fredericton (as I mentioned earlier the regions are coming on stream as we have the resources available).

Electronic information exchange has been implemented as the Departmental Standard! This situation has evolved over three years or so, beginning with the acquisition and experimentation with a desk messaging software package marketed by HP - HP Desk.

At the time computer utilization within the Department was principally focused in the senior researcher/clerical staff areas with some spotty utilization at the Director/Senior Management Level. The availability of used micros at bargain basement prices lead us to conclude that electronic mail was within our economic reach and we opted to embark on that approach. This was I believe the first occasion in 7 years when the Department effectively imposed a computer application on program directors.

After concluding at the senior management level that the approach was appropriate, I met with all the directors and informed them that in six months time no information would be exchanged between my office and theirs' which was not in an electronic format. Those who resisted would simply have to rely on their secretaries to keep them informed as to what was going on in the Department.

I further informed them, however, that in my view it would be less than five years before they would have to employ a computer terminal to access their own filing and records keeping systems and that it seemed to me if they were going to have to get used to using the infernal thing anyway they might as well get started. As an aside we are at the point of implementing our computerized filing and records management system next month.

Of 16 Directors in the Department, two or three initially resisted computerizing our management information exchange. I noticed the last remaining holdout had one of our $700 wonders on his desk early this summer and has begun to use it for messaging purposes rather than having his secretary send them for him.

The benefits of such an arrangement should be obvious to all present here today but a couple of quick illustrations might be instructive:

(John Roushorne narrated the events required *before* and *after* HP Desk to issue either an internal memo from the Deputy or the preparation of a letter for the signature of the Deputy/Minister)

The Minister's and Deputy's letterhead are the only letterhead kept in stock in the Department! Departmental letterhead, Memo to Cabinet, B.of M.,internal memoranda and other like forms are all stored in our laserjet printers enabling the user to print out the content of the message along with the form on a blank sheet of paper.

The development of these forms as well as many of our other applications has been undertaken by our small staff of experts. Staff have developed over time in response to the demands placed upon them. We've never used any outside consultants. Initially, because we couldn't afford them and we still can't but I can honestly suggest to this group that I

don't think I'd rely on outside experts even if money were no object. We were forced by circumstance into finding a mechanism to make work, those things that we wish, in the fashion in which we wish. This may mean "making" something, attempting to persuade third parties to undertake, or bullying the vendor to implement some potentially unorthodox solution.

My people, I know, often get the feeling they're holding the process together by bailing wire, string and 16 hour days; but hold it together they have done up until now. It would be highly desirable if we had the training position we forfeited to the budget process this year - maybe then the Deputy wouldn't have to go off to show a secretary some place in the department how to manipulate a particular document that he's looking for - but we don't.

Beyond the internal benefits I was alluding to earlier, we have established electronic linkages with the N.B.I.S, translation bureau, outside translation services, and others. - again, the efficiencies we generate from moving documents from the department to translation and receiving back an electronic version of the translated document back, saving physical handling, transporting, typing and probably retyping and retransporting the document are clear. -likewise, I'm sure most of the senior managers in the room can appreciate the value of having a copy of what went out on the wire from N.B.I.S. when the reporters are calling and asking questions rather than 3-5 days after the fact as was our experience previously.

Savings in time is, in my view, a constant in all of this, but speaking of time I've exhausted mine!

Having witnessed the advantages of electronic messaging within my own Department, I've become somewhat of a proselytizer on the subject with my colleagues and others. At times I get frustrated concerning the apparent lack of initiative towards a government wide management information exchange system, but then I recall that not many have been as fortunate as I in viewing the "Promised Land"

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

DEMYSTIFYING G. I. S.

Janice LeBlanc
Assistant Commissioner
Office of Economic Development

"EXECUTIVE SUMMARY

After twenty years of investment, New Brunswick and the Maritimes can boast an "innovative community of information technology managers". Our Province is also noted for advanced resource management practices, particularly in the area of forestry where we enjoy extensive data bases and advanced information systems.

Because of their Maritime scope, our mapping agencies have developed expertise in networking, interacting and exchanging information between various different information systems. Massive data banks are being compiled by different resource agencies. The possibility of linking several of these data banks to create a powerful information network was the vision upon which a land information system proposal was made twenty years ago. Today, technology can easily meet the challenge.

The difficult task is organizing the data and the information network. For example, at the federal government level, the scale of an interactive information network between various departments boggles the mind. Federal departments are usually quite self-sufficient and have minimal horizontal interaction. On a provincial scale, however, a land information system project appears more attainable and, in fact, the Department of Municipal Affairs and Environment is mandated to provide a proposal for such a system by August 1987 (OGR, Surveys & Mapping, 1985).

THE ATTACHED REPORT DOCUMENTS THE SITUATION AND RECOMMENDS A COURSE OF ACTION TO TAKE ADVANTAGE OF OUR UNIQUE OPPORTUNITY."

TOWARDS A LAND INFORMATION INDUSTRY FOR NEW BRUNSWICK

INTRODUCTION

A Science and Technology policy was announced by the Government of New Brunswick in September 1985. Under this policy, a Science and Technology Secretariat was created and mandated to establish provincial priorities and recommend expenditures in science and technology. The Secretariat would provide a government focus and coordination with federal and other external agencies on issues related to science and technology. Recognizing that pursuit of innovation and the adoption of technology were fueled by the economic development needs of the Province, the Science and Technology Secretariat was housed in the Department of Commerce and Development. This Department highlighted its expanded mandate by changing its name to the Department of Commerce and Technology.

At the same time, a study completed by Arthur D. Little of Canada (ADL, 1985) encouraged the Province of New Brunswick to pursue a Science and Technology Strategy based on economic development opportunities and urged the Province to focus its technology initiatives in its areas of comparative strength. The study cautioned about the dominance of the public sector in science and technology activities and urged strengthening the private sector role. During their discussions in New Brunswick, the consultants warned that a major limiting factor to technology adaptation in our Province was the lack of ability to manage and market our technology. In other words, our weakness was not in developing technology but rather in exporting it in an innovative way.

This message echoed the recommendations made five years ago in a Council of Maritime Premiers report on Technological Innovation: An Industrial Imperative. A committee of Maritime representatives demonstrated vision in linking research and development needs to industrial innovation needs. The recommendation highlights the importance of understanding the "market and the competition" and of "building on industrial strengths".

The important link between science and technology and economic development are consistent with the priorities and issues outlined in a working paper (MOSST, Feb. 1985) formulated a few months earlier by the Federal Ministry of State for Science and Technology. Highlighting the importance of private sector investment in innovation and endorsing the use of incentives and government procurement policies to support Canadian innovation, this paper raised important questions such as that of linking government grants to the level of export activity generated or shifting focus from the development of technology towards its diffusion and marketing. This reflects increasing awareness that the challenge meeting Canadians is not

"invention" but "innovation". In other words, what we wish to obtain is effective exploitation of technology as opposed to creation of new technology. In assessing the role of federal government research and development activities, the report urged closer cooperation and technology transfer between provincial and federal governments. It is important to put the technology out to the regions. The use of Federal-Provincial Sub- Agreements was encouraged as a mechanism to pursue individual specializations and joint academic/private activities.

A Technology Centre Study (MOSST, Ottawa, 1986) also prepared by the Ministry of State for Science and Technology observed that Canada already had too many federal research centers, particularly in Ontario and Saskatchewan and that these federal research centers had the lowest direct service to industry (DSI) index of all types of research centers studied. Conversely provincially and privately managed centers (such as RPC) measured a high DSI index. Ironically, more than 75% of federal financial support is allocated to those centers with the lowest DSI index and centers with the highest DSI index have to rely on nonfederal sources for more than 85% of their revenues. This enlightening report concluded that the Federal Government would be receptive to proposals for non- federally managed centers. In approaching the Federal Government for a research center, the sell must be on high direct service to industry.

It was against this background that the newly created Science and Technology Secretariat began to gather information on the New Brunswick science and technology strengths, resources and opportunities. Early exploration and our involvement in the Canada Inter-Provincial Consultation Committee on Space Program led to our study of remote sensing activities of several departments, then to the computer mapping technology developed by Universal Systems Ltd., and the "avant-garde" operational forestry resource management information system linking private, government and educational facilities of the Province. Progressive inquiries led to the uncovering of an intricate network of information managers serving New Brunswick and the Maritimes. Drowned in quasi-government agencies, many information technologists are working with sophisticated equipment to produce innovative solutions to meet the often persistent demands of many independent governments and agencies and at the same time, serve the needs of the public at large.

The purpose of this paper is to introduce the science and technology resources of the Province of New Brunswick in the area of land information systems with particular emphasis in the area of mapping and resource management and to propose a course of action to strengthen its development and commercial exploitation.

HISTORICAL EVOLUTION FOR A LAND INFORMATION SYSTEM IN NEW BRUNSWICK

Twenty years ago, a New Brunswick civil servant, Willis Roberts, put forth a proposal for a land information system for the Atlantic Provinces. The project, he wrote, would generate an indisputable amount of knowledge capable of yielding information for economic planning and development of our natural resources. The four stages of the project would include: i) surveying, ii) large scale mapping, iii) a land title system, and finally, iv) the land information system referred to as a data bank. Based on existing technology of microfilming, indexing and computer storage, this last phase would be a technological breakthrough in information systems.

Two years later, concern that a lack of proper land tenure systems was having a detrimental effect on industrial development projects, led to the Atlantic Development Board signing agreements with each Province for programs consisting essentially of the first three phases of the Robert's proposal and a diluted and ill-defined version of Phase IV - the land information system. In 1968, $3,997,000 were committed to this project for a two year period.

In pursuit of coordination between the Provinces, the Atlantic Provinces Surveys and Mapping Programme (APSAMP) was created. In 1970, APSAMP received $4,975,000 for another two year period from the newly created Department of Regional Economic Expansion (DREE).

In 1972, the newly formed Council of Maritime Premiers (CMP) and the federal government entered negotiations for a ten year agreement to fund APSAMP. Under this new agreement, the Provinces of New Brunswick, Nova Scotia and Prince Edward Island would transfer functions of survey and mapping to the Council of Maritime Premiers. The CMP agreed to develop an improved land registration system and "investigate the potential" for a regional land information system. The Land Registration and Information Service (LRIS) was created to implement the programme. Based on a bold and innovative concept to develop a multipurpose cadastre - the first in North America - LRIS captured the imagination of the information systems communities of the world. The concept, one of integrating all facets of land information to provide a powerful tool for planning and administration, was at the forefront of new technology and information systems processing (DPA, Sept. 1980). In 1973, $21,872 ,000 cost shared at 75% federal and 25% provincial was made available for the first five years of the programme. In 1977, programme changes and inflation necessitated a further $6,000,000.

March 1978 marked the end of the first five year agreement and a further one year agreement for $5,325,000 under the same funding formula was negotiated with DRIE, and, in September of this same year, the federal government announced that it would cease funding and that the Provinces would have to bear the full cost of the programmes.

The withdrawal of federal support brought the Provinces to a reappraisal of the situation, and, in 1980, they entered into an amended agreement which diluted the programme and dropped phase IV. The land information system, which had been the main element of the Roberts' proposal in 1966, was now being officially discarded.

In 1982, the CMP adopted a new funding formula for LRIS, allocating funds on the basis of individual provincial work plans. As a result, LRIS has now become more of a service agency than an innovating cooperative force in information systems.

In 1985, the New Brunswick Office of Government Reform once again questioned the fate of LRIS and other mapping bodies of government and prescribed that the newly created Department of Municipal Affairs and Environment recommend to Government future directions with respect to the Land Registration Information Service and the Maritime Resource Management Service.

The same government reform document (OGR, August 1985) eloquently documented the need in New Brunswick for a land (geographical) information systems and recommended that the Department of Municipal Affairs and Environment present a proposal for a fully-costed, fully-integrated, automated geographic information system by August 1, 1987. So exactly twenty years later, we are full circle back to W. Robert's original proposal. Yet our investments throughout these years have contributed to the emergence of a dynamic information systems community in New Brunswick. World class information managers have evolved in an uncertain work environment. Given some encouragement and a climate of support, these professionals could easily become the proponents and technology engines for a new generation of land information systems.

In little more than a decade of existence in an environment characterized by changing mandates and decreasing financial support, LRIS has continued to perform well. An extensive control survey coordinate system has been established throughout the Maritimes. The Global Positioning Systems, using satellites, is currently being considered for maintaining the secondary network. LRIS has been producing base maps for the Maritimes since 1973 and full first round coverage was completed in 1984. That same year, LRIS acquired digital technology on

the CARIS computer mapping system. At the current financial support level for digital mapping, LRIS, has a schedule for completion of digital resource mapping in 10 years and completion of digital urban series by the year 2001.

Property mapping is the process of identifying and representing the geographical location of land parcels on a base map, assigning a parcel identification number and establishing computer data base containing specific parcel information. In New Brunswick, 363,000 parcels have been identified and full property mapping coverage is scheduled for 1988.

LRIS also maintains an extensive parcel index system, and a pilot project in Albert County for a Land Titles Registry System.

To carry out its responsibilities of system maintenance and regional service, LRIS maintains nine regional offices, five of which are located in New Brunswick. The LRIS headquarters, located in Fredericton, and its satellite offices, are composed of bright and dynamic professionals who are pillars in the information systems management community of New Brunswick. It is important that their activities and innovative spirit be channelled, encouraged and supported. We must recognize that they have served us well until now and will surely need to play an important role in any developments towards a land information system initiative for New Brunswick.

The Maritime Resource Management Systems (MRMS) is another agency of the Council of Maritime Premiers. Staffed and equipped to produce world class thematic mapping, this agency was intended to become a central information coordination center for the Maritimes. For various reasons, including poor cooperation from users, particularly provincial government resource agencies, the concept was never functionally implemented.

DEFINITION OF LAND INFORMATION SYSTEM

A land information system (LIS), also referred to as geographical information systems (GIS) or spatial information systems (SIS), simply refers to a data base of land and people related information linked to a geographical coordinate system. Traditional maps are land information systems on paper medium. They are expensive to update. Recently, the conventional means of producing and presenting mapped information are being revolutionized by computer technology. The map data is digitized and stored in the computer file. Amendments can be made quickly and cheaply. This technology provides the opportunity of creating powerful data bases which allow users to extract customized maps to suit their specific requirements.

Although proponents of uniform scale mapping, LRIS and MRMS have been responding to provincial requirements and producing maps in a variety of scales, sizes, colors and languages to meet the differing needs of many users. As a result, the large scale mapping for the Maritime Provinces is available only in an array of different scales, some of which are metric, some in the old imperial system. Uniform large scale mapping exists.

Digital mapping, adopted by LRIS in 1984, is now practically scale independent. At current financial support levels, LRIS has estimated a 15 year schedule necessary to achieve full Maritime coverage in digital mapping. Storage of data in digital form allows users access to custom produced information which is scale independent and offers flexibility in the presentation of data. In addition, the period of time between the gathering of information and its presentation has been reduced from a year or two to a matter of hours using remote sensing data. Finally, the Global Position System will allow surveyors to get their bearings from a satellite instead of control monuments.

Technology advancement in information systems has created a new industry - the information industry. This new industry is seeing the emergence of a new profession, the information systems manager. This professional requires a multidisciplinary formation to provide the bridge between the needs of the information user and the design and development of the information systems. LRIS and MRMS have developed an experienced staff of information system managers who constitute an important science and technology asset for the Province of New Brunswick which few similar jurisdictions can boast.

NEW BRUNSWICK RESOURCES IN LAND INFORMATION SYSTEMS

New Brunswick's long standing involvement with the design and development of land information techniques has resulted in the Province being in the fortunate position of having a well integrated network upon which to build a land information system. Our information systems community has achieved international recognition. Sadly this fact remains one of New Brunswick's best kept secrets. In the twenty years since Willis Roberts proposed his land information systems, much progress and many setbacks have occurred. However, New Brunswick has continued to develop its information systems network and its scientific community continues to hold the interest of the world.

Recently, the Government has been bombarded by proposals to support development projects in geographical information systems for New Brunswick, some of which include:

LRIS - Proposal for Expanding a High Tech Industry in the Maritimes (August 1985)

MRMS - Let's Put the Maritimes on the Map (March 1985)

OGR - The Need for a Geographical Information System (August 1985)

UNB - LANDNET, A Centre for Resource Information Studies (McLaughlin, November 1984)

LRIS - An On-line Cadastral Information Project (Castonguay, December 1985)

These proposals give credence to the dynamism of our information systems management community. This community is diverse and can be divided in three groups: 1) producers, 2) users, and 3) researchers, which we shall briefly introduce in the following sections.

PRODUCERS

LRIS, the major mapping agency for New Brunswick, produces topographic and property maps. It has adopted the Computer Aided Resource Information System (CARIS) computer mapping technique which was developed at UNB and is marketed and sold internationally by Universals Systems Limited, a dynamic New Brunswick firm.

MRMS is a Maritime agency, capable of producing theme maps. A theme map is produced by applying a layer of information on a base map, such as soil types. It uses a Geo Based System computer mapping technique. Several provincial departments, and more notably, the Department of Transportation, and the Department of Natural Resources and Energy, also produce thematic maps.

An ESRI computer mapping technique successfully outbid CARIS and was awarded its first major contract in forest management by the Department of Natural Resources and Energy. ESRI, an American system, went on to capture the Canadian and American mapping markets in the field of forestry. It is also interesting to note that the American company selling the ESRI system employs U.N.B. Surveying Engineering graduates.

Universal Systems Ltd. (USL) produces one of Canada's most advanced digital mapping systems called CARIS. USL was awarded a $1.3 million contract for a digital mapping system in the Maritime Provinces. This company is also making inroads in the international computer mapping market. More recently, USL made a breakthrough in the international market by selling systems to the Dutch Marine and to the Australians. Other provinces and federal agencies have also expressed interest in the system.

Many federal agencies are also producers of mapped information, including Energy, Mines and Resources (the National Topographic Series), the Canadian Hydrographic Service, Agriculture Canada, Environment Canada, Statistics Canada, and the Department of Fisheries and Oceans.

Several New Brunswick departments also produce maps, principally among them the Department of Natural Resources and Energy and the Department of Transportation, which have served as mapping agencies for several provincial users. (OGR, August 1985, Palmer).

These are just a few producers of the maps we use in New Brunswick and they are all interlinked to varying degrees by an informal network of information transfer.

The various departments, agencies and private companies of the Province of New Brunswick currently use several different digital mapping languages principal among which are:

-the ESRI System which is well integrated in the forestry resource management sector and the major users of which are the Department of Natural Resources and Energy, the Irving Group and Fraser Inc.

-the CARIS system is marketed and sold by a New Brunswick company. It has been adopted by LRIS for digital base mapping for the Maritimes and by the Federal Canadian Hydrographic Service.

-the GEO BASED system was the first digital mapping technology acquired in the Maritimes and is being used by MRMS.

-The INTERGRAPH System is used by the private sector such as Brunswick Mining and New Brunswick Electric Power Commission, and is also the main digital mapping system used by the Federal Department of Energy, Mines and Resources.

Yet, what appears like a proliferation of incompatible systems may not necessarily be so. Technology development is progressing towards allowing each of these systems to exchange information in order to develop increasingly powerful data bases which are the prerequisite for fully integrated information systems. For example, the Digital Line Graph (DLG) was developed by the United States Geological Surveys (U.S.G.S.) as an interchange format for different computer software. It works as a universal language providing broad access to queries. The ESRI system has this important DLG capability as a standard feature which allows it to tap the massive data resources of agencies such as U.S.G.S. Driven by the need to tap information from the Department of Natural Resources and Energy, the Irving Group, Nova Scotia Land Surveys Institute, etc., MRMS has recently developed DLG capability for its GEO BASED system. Similarly, LRIS is developing DLG capability for the CARIS digital mapping technique as a means of exchanging data with the federal government. The Canadian government has also been working on universal transfer formats for many years, the most recent project being the Map and Chart, Digital Interchange Format (MACDIF). Writing software to allow data exchange between competitive systems is not difficult if the vendors of the two systems in question are prepared to cooperate. The CARIS system has written interface with SIF (Integraph), DLG (United States) and NAT (Australia).

What stands out in the Maritime information community is that interactive communication has become a focus for many of our digital mapping users. This rose from the need to interact with many agencies, different systems and data banks. This coupled with the fact that New Brunswick is well mapped, relatively small, technologically competitive in information systems, and has already invested two decades and many millions of dollars towards the basic infrastructure upon which to build an extensive integrated information system, contributes to making our Province a credible candidate for a Canadian demonstration project or pilot project in land information systems. All that is needed is a good project proposal supported by the information systems community of the Province, endorsed by the Government of New Brunswick and submitted by the latter to the Federal Government.

In August 1985, in keeping with the recommendation of the Office of Government Reform, the responsibility for surveys and mapping was consolidated with the newly created Department of Municipal Affairs and Environment. As mentioned previously, the mandate includes that of making recommendations on the future fate of LRIS and MRMS. Although OGR recommendations support the pursuit of centralization, standardization and coordination, technology developments offer promise for decentralization, diversifications and interactive networking. The current network linking map users to producers is imperfect and fragile, yet it represents decades of planning and building. Change offers opportunities but the process of dismantling and rebuilding can be regressive.

USERS

The biggest challenge for the producers of information systems has been to identify the users. In his thesis on A Land Information Network for New Brunswick, David Palmer (Palmer, 1985) documents how the land information community in New Brunswick and elsewhere has failed to clearly identify what information is required by whom and how frequently. Therein remains the basic information systems challenge. Mr. Palmer's thesis concludes that in order to be successful, an information network must be designed by users for users. It is also noted that the collector of information is also a user and an important link in the network. The Centre for Resource Information Studies at the University of New Brunswick (McLaughlin, 1984) is conceptually based on this thesis. A list of typical users of land information systems would include Emergency Dispatch Systems, Emergency Planning, Land Disposition, Municipal Administration, Taxation Data, Protection of Persons, Property and Land Titles, Public Works and Utilities, Resource Management (both renewable & non renewable), Environmental Assessment & Modelling, Recreation, Search and Rescue, Tourism, Transportation & Traffic Circulation, Statistics, Forest Fire Fighting (By combining information on computer such as wind velocity and direction, soil moisture, etc.), Flood Forecasting and Terrain Modelling - just to name a few.

Government user departments currently coordinate their procedures and requirements through a Surveys and Mapping Committee. The Committee groups a multidisciplinary team of dynamic individuals from user departments and has generally been effective in spite of its loose mandate and lack of formal support. In recent years, the Committee has played a major role in the evolution of government views on the subject of land information systems. The Committee is currently being restructured as an advisory group to the Head of the new Surveys and Mapping Unit to be formed in the Department of Municipal Affairs and Environment.

RESEARCH INSTITUTIONS AND DEMONSTRATION PROJECTS

The University of New Brunswick (UNB) presents itself as an engine of technology in land information systems. The Department of Surveying Engineering is currently celebrating 25 years of existence. According to Professor McLaughlin, this Department boasts the "Harvard Network Alumni" in geographic information systems. Beyond academic research, this group has been active in promoting a land information network (LANDNET) for New Brunswick. The LANDNET proposal (McLaughlin, 1984) for a Center for Resource Information Studies at U.N.B. has mobilized provincial and federal support. The Centre has already gathered more contract work than it can comfortably handle with its present staff and students. Annual workshops (LIS-90) on

geographic information systems are organized to promote dialogue between producers and users. Graduate students pursue on-going research in the geographical information systems field. The University was designated a Centre of Excellence in information management by the Institute for the Modernization of Land Data Systems - an organization of North American government agencies involved with land records management (McLaughlin, 1984).

The Geography Department of the Université de Moncton with support of the Canadian Institute for Research on Regional Development has carried out demonstration projects for geographical information systems. (LaMarche & Phipps, 1982)

The Canadian Forestry Service, in cooperation with the Petawawa Remote Sensing Center is formulating a demonstration project linking the forest management information systems of New Brunswick to the powerful technology of remote sensing. The Province of New Brunswick was selected for this project because it is believed to have the best forest management information system and data base in the country and probably the world. Large private companies in forestry related activities are an integral part of this information network.

The Canadian Center for Remote Sensing of EMR has expressed intent to cooperate in a joint research project on remote sensing applications in New Brunswick. With its mandate for technology transfer and its new Technology Enhancement Program, this agency is willing to provide people, equipment and dollars in support of provincial application projects for remote sensing data and technology. Most provinces outside of the Maritimes have already initiated such projects.

PRIVATE SECTOR

Most of the funds made available to information systems in the past twenty years have stayed within government or quasi-government agencies, including LRIS, MRMS, and NB Power. With the notable exception of Universal Systems Ltd., which was spawned from the Canadian Hydrographic Services and the Surveying Engineering Department of UNB, the private companies of the Province have not expanded their markets beyond that of serving local needs. It has been suggested that a lack of government contracts and direct competition from government supported agencies has stifled growth of private mapping industry in Maritimes.

Several studies have defined the important and growing foreign markets for land information systems (DPA, 1980, Canadian Institute of Surveying, 1985). DPA Consultants have already parlayed the study they did in 1980 for L.R.I.S. International Corp. into several hundred thousand dollars in contracts. The 1980 study has estimated the international market for information systems to be several billion dollars. More

recently, the Service Sector Study completed for the Department of Commerce and Development by DPA Consultants identified geographical information systems and translation services as the two information industries in New Brunswick with the most immediate potential for export markets.

Other jurisdictions, such as Ontario and Quebec, have aggressively embarked on major projects for developing integrated land information systems and have developed strategies relying heavily on the private sector by contracting out major portions of the work. (Barnes, J.D., Trillium Data Group Ltd. 1986, Le Nouveau Cadastre du Québec, 1985).

CONCLUSIONS

(1) New Brunswick has extraordinary experience and technology resources in the field of land information systems. Twenty years of financial and political commitment have been invested towards improving land information systems and developing its human resources and expertise in this area.

(2) The New Brunswick information systems community and its state of technology are now ready to tackle the challenge of an integrated information system. Basic information, basic structures, and basic expertise are already in place. What is lacking is clear direction and commitment.

(3) A lack of government contracts and the present "in-house" policy for production has stifled growth of the private sector information and mapping industries in New Brunswick.

(4) Agencies in New Brunswick have recently been participating in the growing volume of international work. Without direct marketing or solicitation, LRIS has been involved in projects in South Australia and the Barbados. The training courses presented by LRIS (Introduction to Property Law, Acquiring Digital Technology, Title Searching Course) have attracted students from across the country. The Landnet group at UNB, established relatively recently, has all its staff and students fully occupied in research related to land information. Two New Brunswick firms (John Henderson & Associates & DPA) have been involved in significant CIDA international projects in the past year.

(5) A well planned national pilot project or demonstration project in land information systems in New Brunswick could be favourably received by the federal government for cost-sharing.

(6) That USERS of land informations systems are the market and any system proposed would be useless unless its meets the basic requirements of the majority of users.

RECOMMENDATIONS

It is recommended:

(1) That the Province of New Brunswick adopt as a policy the intent to develop information technology and market it to the world.

(2) That the Province of New Brunswick establish mechanisms to attain this goal as follows:

(i) pursue an aggressive policy of contracting out a significant portion of the $23,000,000 spent annually on land information systems (OGR),

(ii) direct the Department of Commerce and Technology to monitor departmental budgetary expenditures in land data and mapping information activities,

(iii) provide the Department of Commerce and Technology with a special budgetary allocation of $1,000,000 per year for 5 years to supplement provincial departments' funds allocated for contracting out to New Brunswick firms in the information systems sector.

(3)) That the Science and Technology Secretariat pursue the establishment of the Province of New Brunswick as a national center of excellence in land information systems by supporting New Brunswick demonstration projects of national scope and encouraging technology transfer from federal labs and agencies.

(4) That the Science and Technology Secretariat in cooperation with the Department of Municipal Affairs and Environment structure a task force gathering major land information users to;

(i) assess market potential for Canadian information technology systems,

(ii) formulate a proposal for a national demonstration project for a fully integrated land information system,

(iii) present a strategy to finance the project which will recognize a partnership role for user agencies, the private sector and the federal government, such as mechanisms of matching funds and sub-agreements that will allow user departments to provide quick funding to the projects,

(iv) incorporate technology transfer from federal departments as an important component of the project,

(v) consider the existing proposals and projects for land information systems currently being proposed and supported in the Province;

In concluding, I leave with you these words of wisdom from Antoine De Saint-Exupery, in his book, Flight to Arras: "to know is not to prove, not to explain - it is to accede to vision. But if we are to have vision, we must learn to participate in the object of the vision. The apprenticeship is hard".

Janice M. LeBlanc, P. Eng.
Science & Technology Secretariat

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

STRATEGIC INFORMATION PLANNING

Richard Dunphy
Manager, Client Services
Information Systems Division
Supply and Services

STRATEGIC INFORMATION PLANNING

An Overview

AGENDA

1. Why plan?
2. Project methodology
3. Team
4. Do's and don't's

INFORMATION

- A valuable corporate resource
- Good information is needed in order to make good decisions.
- Also required for
  - Planning
  - Policy development
  - Program development

INFORMATION

To be useful information must be

ACCURATE

and

ACCESSIBLE

WHY PLAN?

Uncoordinated use of information technology will lead to isolated pockets of information, incompatibilities, and unknown accuracy.

AGENDA

✓ 1. Why plan?

➡ 2. Project methodology

3. Team

4. Do's and don't's

OBJECTIVES

1

To examine an organization's business and its environment to determine at what points information and technology may be used to support its mission, goals and objectives.

OBJECTIVES

2

To define an information technology environment which the organization should strive to achieve over a three to five year period.

OBJECTIVES

3

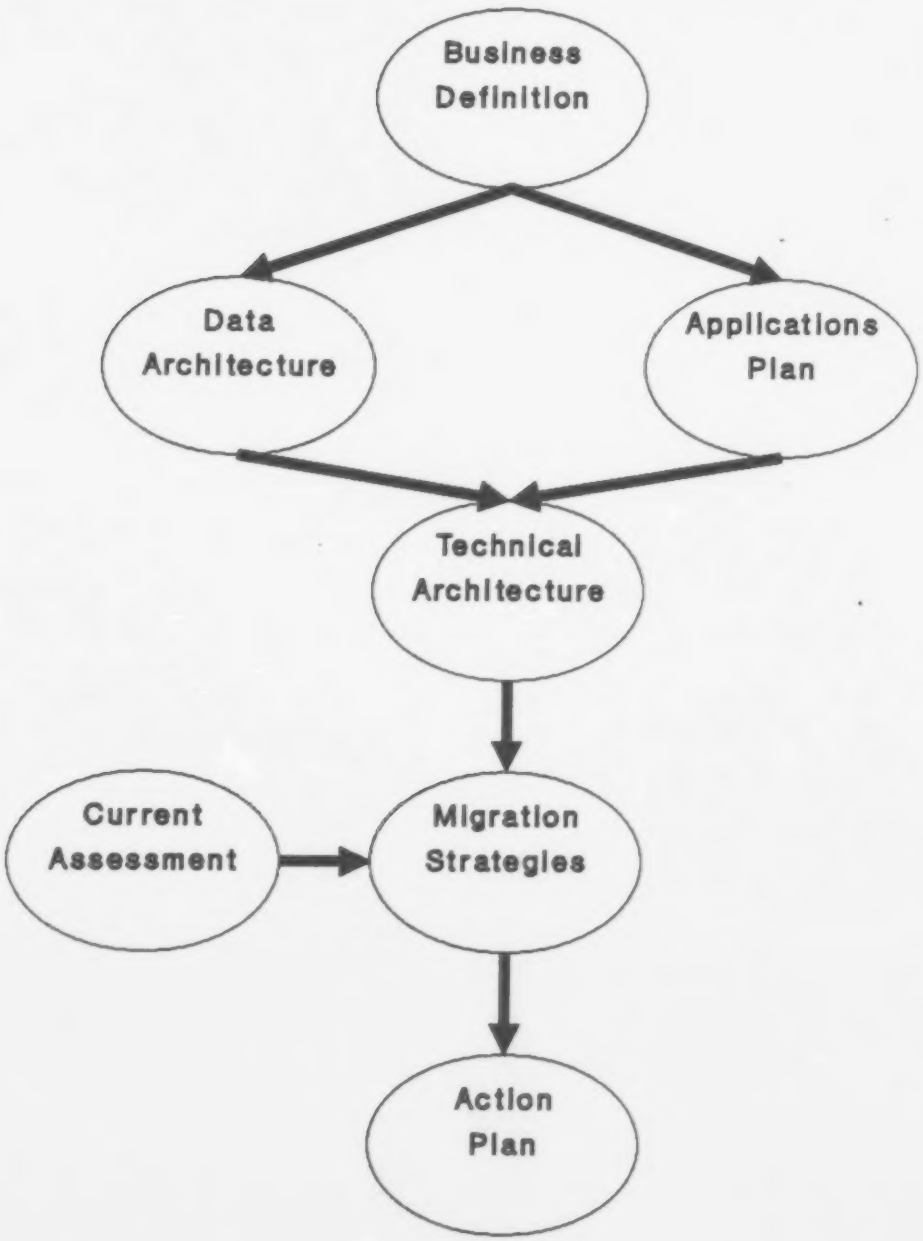
To develop strategies and plans to ensure successful implementation of the target environment with minimum negative impact on the organization and its resources.

S.I.P. METHODOLOGY

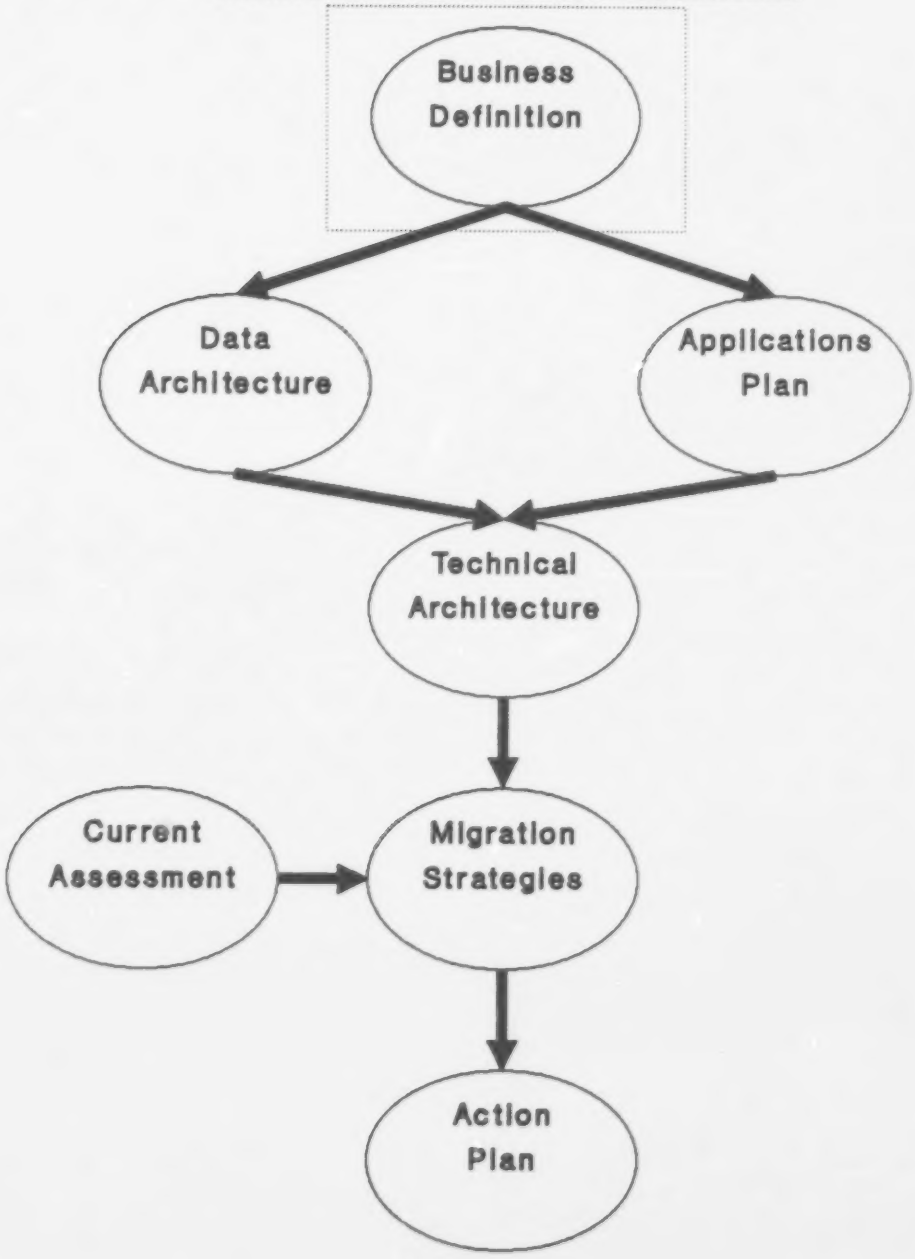
Three major steps:

1. Analyze the business in terms of its information requirements.
2. Define a target environment.
3. Develop implementation strategies and plans.

PHASES


Business Definition
Data Architecture
Applications Plan
Technical Architecture
Current Assessment
Migration Strategies
Action Plan

PHASES


Business Definition
Data Architecture
Applications Plan
Technical Architecture
Current Assessment
Migration Strategies
Action Plan

BUSINESS DEFINITION

Logical analysis of business.

Focus on information requirements

Uses:

Interviews - top-down

- all levels

Documentation

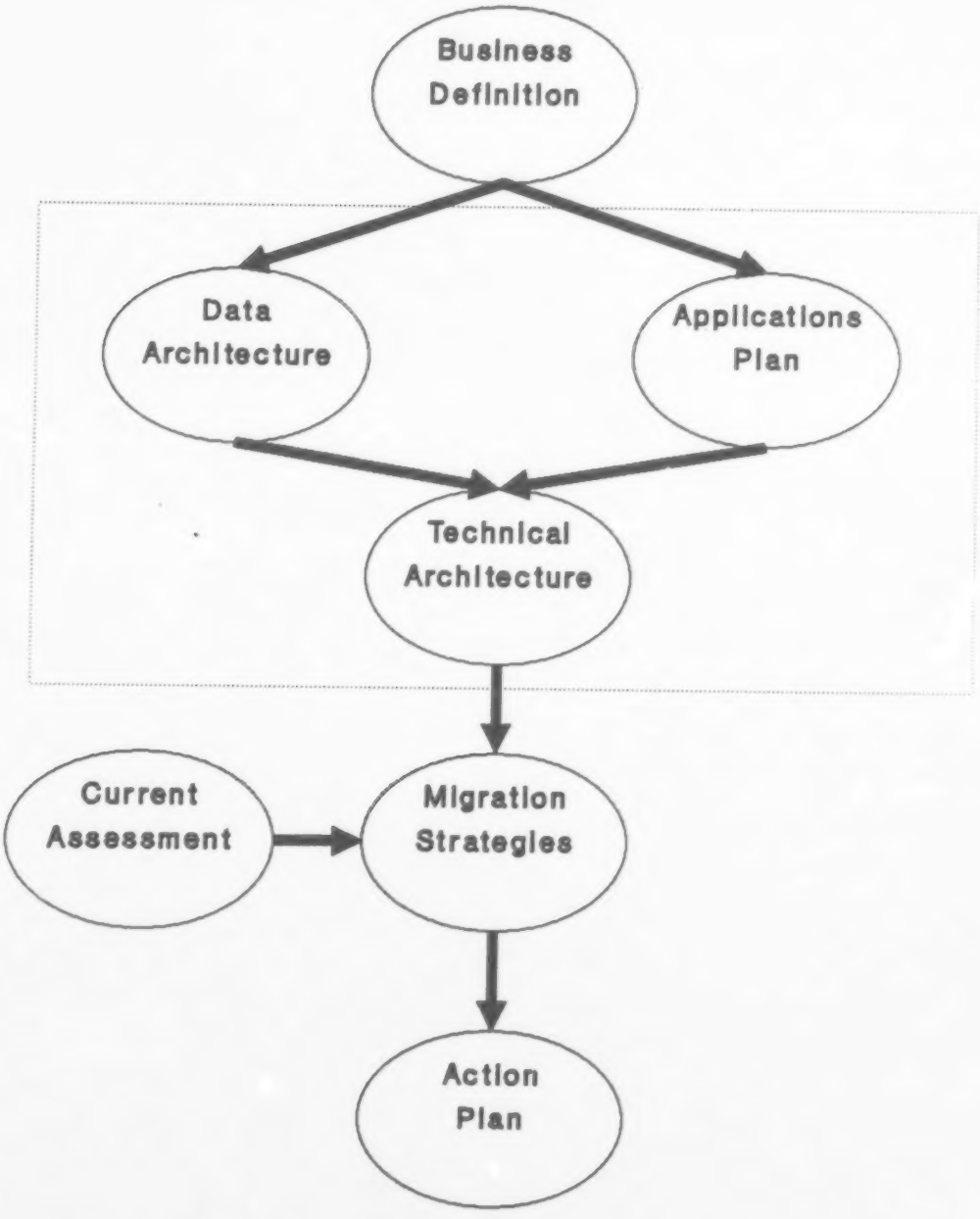
BUSINESS DEFINITION

Output includes:

- M/G/O
- Critical Success Factors
- Current priorities
- Enterprise model
- Functional matrix
- Issues
- Opportunities

50%

PHASES


Business Definition
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Action Plan

DATA ARCHITECTURE

Logical data model showing:

Data domains

Major entities

Relationships

The data model is relatively constant and depends on the business not the organization.

APPLICATIONS PLAN

Applications hierarchy

- Corporate
- Departmental
- Work group
- Personal / individual

Also defines interconnection, priority and areas addressed.

NOT SYSTEMS REQUIREMENTS!

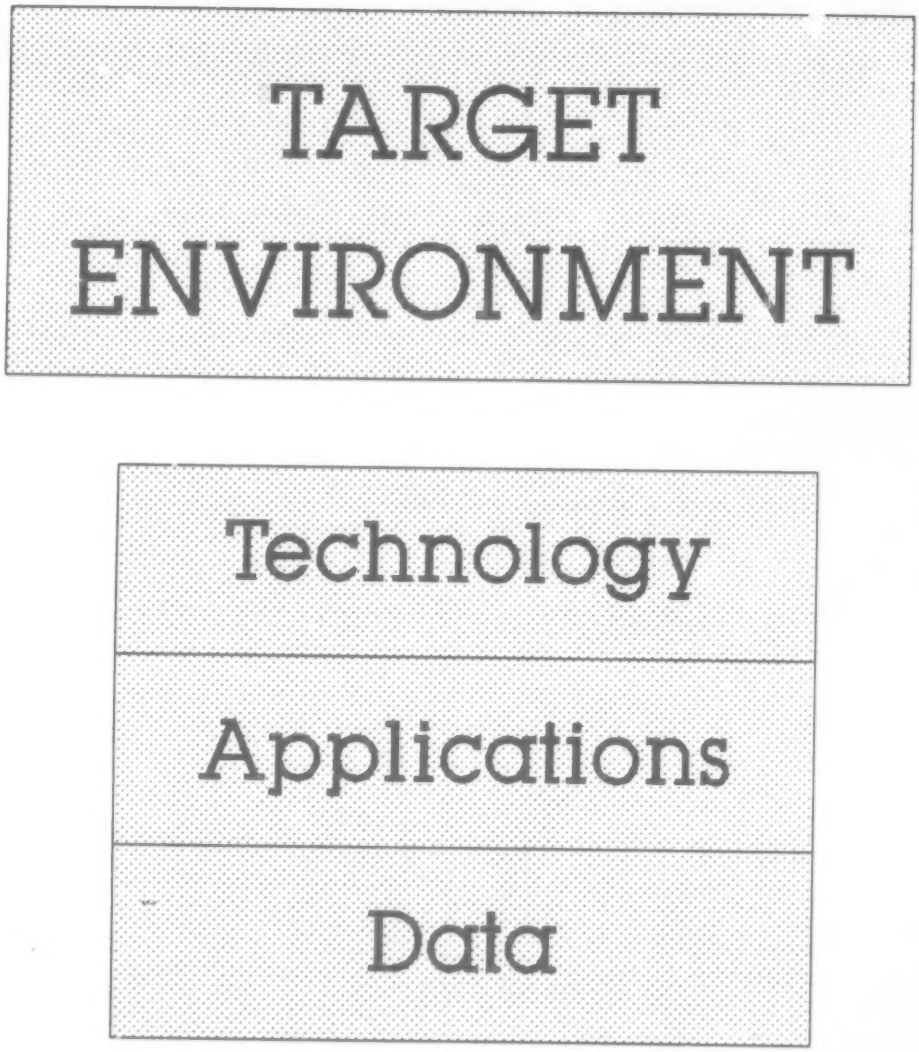
TECHNOLOGY ARCHITECTURE

Hierarchical

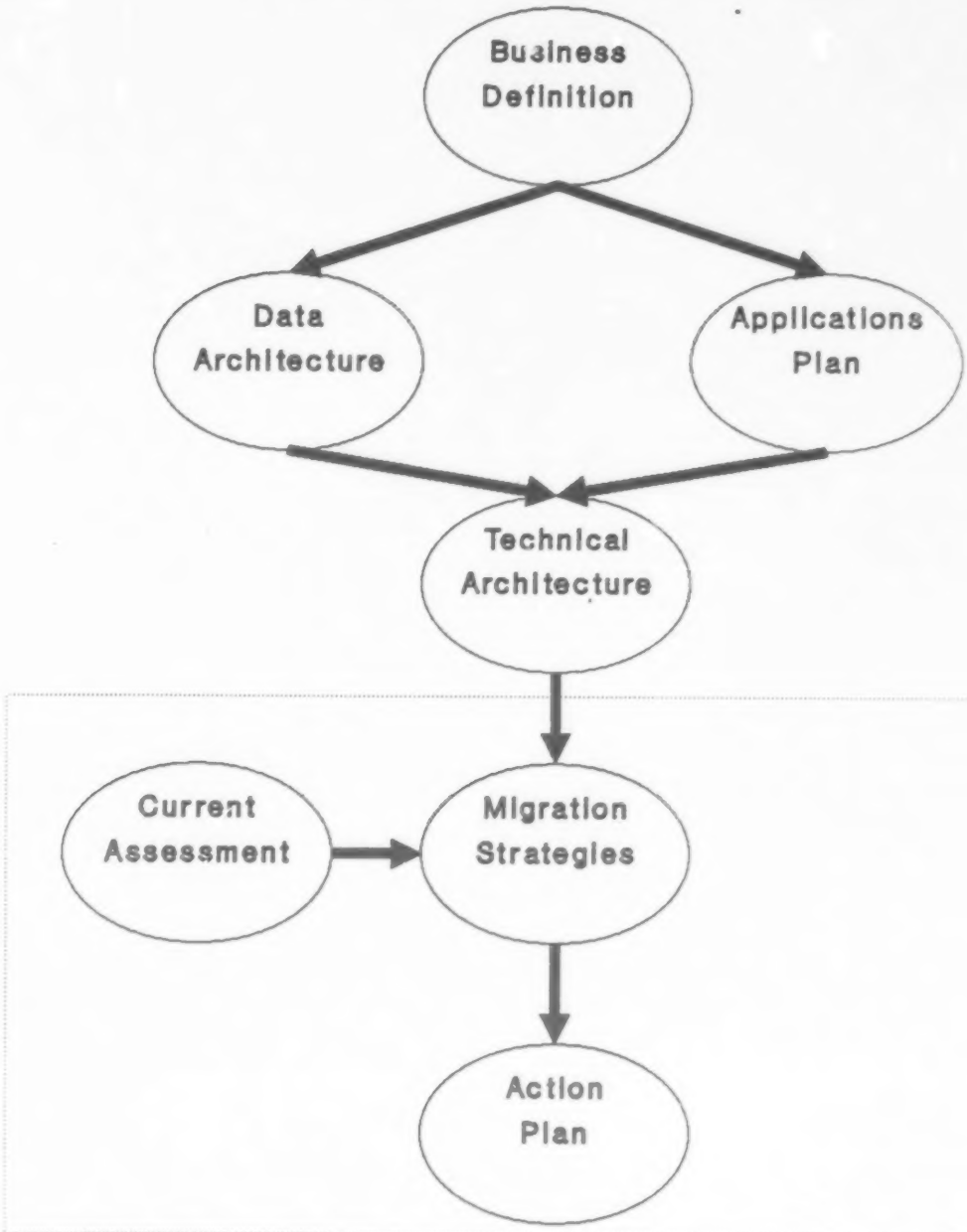
Based on data architecture and applications plan.

Identifies:

- Hardware
- Software
- Communications
- Tools


TARGET
ENVIRONMENT
Technology
Applications
Data
30%

PHASES


Business Definition
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Technical Architecture
Current Assessment
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Action Plan

CURRENT ASSESSMENT

What have we got?

- Hardware
- Software
- Applications

Can we use it?

- Use as is
- Upgrade
- Dispose

MIGRATION STRATEGY

How do we get from here to there?

Approach

Training

Support

Coordination

Impact

$

Staff

Benefits

ACTION PLAN

6 month - 1 year period

Specific tasks including:

- Dependencies
- Critical path
- Initial costs
- Overall project plan

AGENDA

✓ 1. Why plan?

✓ 2. Project methodology

➡ 3. Team

4. Do's and don't's

TEAM MEMBERS

1. Project Manager
2. Lead Consultant
3. Functional Architect
4. Technical Architect
5. Analysts
6. Technical Experts
7. *Client Representative(s)*

ATTRIBUTES & SKILLS

Communications skills

- oral & written

Analytical skills

Image

Neutrality

Ability to grasp the broad picture

Flexibility

Full-time availability

Experience

CLIENT REPRESENTATIVE

Must know the business well.

Known and respected by management.

Analytical/communication skills

A critical component of the team.

100% dedicated to project

CLIENT SUPPORT

Executive Sponsor(s)

Deputy or ADM level

Steering Committee

Sponsors + 3 - 4 managers

Senior management commitment
is critical to the success of the project

AGENDA

✓ 1. Why plan?

✓ 2. Project methodology

✓ 3. Team

➡ 4. Do's and don't's

DO's AND DON'T's

DO:

Get senior management commitment

Get the right team.

Be prepared to work.

Work top down.

Be prepared to commit $ and time.

Have a good set of M/G/O

Keep management involved and informed.

DO's AND DON'T's

DON'T:

Consider it a technical study.

Impose your own flavor.

Get into too much detail.

Get too involved with the physical organization.

Get hung up on the current technology.

Use the study to solve other problems.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

METHODOLOGIES PROJECT REPORT

Prepared by Keith Murray
Client Services Manager

Delivered by Robert Ellis
Acting Executive Director
Information Systems Division
Supply and Services

Methodology

Study Project

- Commence June 1987
- Critical Success Factor
  was
  System Development
  Environment

Systems Development Environment

A Systems Development Environment is defined as:

"the physical and non-physical attributes, in the work place, required to provide planning, Consulting and Development services".

S.D.E. ATTRIBUTES

Physical	*Non-Physical*
Methodologies	Management
Tools	Principles
Standards	Coaching
Conventions	Climate Setting
Data Dictionary	Skill Sets
Project Handbooks	Training
Workbench	Commitment

Methodologies

Methodologies are the primary physical attribute of the Systems Development Environment. These are required to ensure consistency in form, content, process, and product.

Planning Methodology

A Planning Methodology identifies (data, applications, technology) to support the defined departments business, objectives and functions.

The planning methodology would identify:

- the departmental business strategy,
- the departmental technology strategy
- areas where information technology could be improved
- the recommended priorities.

Project Management

Methodology

A process by which projects can be planned, controlled and communicated.

Attributes include:

- project definition,
- resource assignments,
- planning,
- defining roles, responsibilities and structures
- recognizing relationships to other projects and systems,

Project Management

What is Involved

- ensuring change is managed,
- scheduling activities,
- establishing guidelines for managing time and resources,
- identification of project progress and slippage,
- ensuring user involvement,
- ensuring that progress is accurately measured and establishing an acceptance procedure,
- estimating guidelines with a step-by-step description of the estimating process.

System Development

Methodology

Allow Conventional techniques including:

- iterative development (prototyping)
- data and process modeling

and

- structured techniques.

Cont'd

System Development
Methodology

- Change control procedures are required
- Adherence to standards procedures and guidelines
- Clearly defined deliverables
- Readable and easy to understand
- Forces a degree of discipline
- Flexible and adaptable
- Credible

Methodology

Study Project *GOAL*

To develop within a Systems Development context the ...

- *Project Management principles*
  and
- *System development procedures and practices*

necessary for the effective development of applications within the Information Systems Division of N.B. Supply and Services.

MSP OBJECTIVES

- Create a foundation for a Systems Development Environment.
- Integrate Project Management and System Development methodologies to:
  - . Standardize our approaches
  - . Ensure the content and consistency of deliverables
  - . Manage our projects and resources more effectively

SCOPE

- Departmental Business and Systems Planning
- Standards, techniques, tools and procedures
- Assessing the impact on the organizational structure
- A training and implementation strategy.

Activities

- Initial planning session MSP team and Client Services Management
- Intervied C.S. Mangement and Project Leaders
- Reports to Steering Committee
- Project Management courses attended (Generic and 4 gl)
- Vendor lists created
- Requests for Proposals to short-listed vendors
- Subsequent evaluations and presentation to senior management of Supply & Ser.

Vendors

IBM, Coopers & Lybrand, Systemhouse Inc., Yourdon, DMR Group Inc., Pete Marwick, McDonnell Douglas, Synerlogic, Manager Software Products Inc., Arthur Anderson & Co., Price Waterhouse., CGI., AGS Management Sys., LGS., NYNEX Computer Services., Laventhol & Horwath & Newkirk Mgt Sys., Nastec Corp., Deloitte Haskins & Sells.

Criteria

To Short-List

Recognized in the Information Management Industry as having a proven marketable product.

Methodology must be complete, integrated and include:

- Systems Planning
- Project Management
- Systems Development

Cont'd

Criteria

To Short-List

Applied "State-of-The-Art" techniques:

- Data Modeling
- Process Modeling
- Prototyping and 4th Generation Language considerations
- Compatible with application of productivity tools

Reasons for
Not Selecting

.. CASE products (Computer-Aided Software Engineering are incomplete and not fully integrated.

.. Some products are hardware dependent.

.. Some toooooo expensive.

.. Products were incomplete and didn't meet all selection criteria

.. Unable to verify credibility

Short-List of
Vendors / Products

Coopers and Lybrand Consulting Group SUMMIT- D and SUMMIT- S

Systemhouse Inc.

Systems Development Life Cycle (SDLC) and

Systems Integrated Life Cycle (SILC)

DMR Group Inc.

Information Systems Delivery Series (Productivity Plus)

SCOPE

Change

Scope has changed:
to consider a corporate implementation. References include input from:

... Auditors report

... Board of Management Minute (HRIS review)

... Chief Information Resource Officer

... Deputy Minister of Supply and Services

RECOMMENDATIONS

- Use Nondisclosure licence (Productivity Plus) for a *Pilot Project.*
- Followed by:
  " Results to be tabled with the Technology Strategy Steering Committee".

PILOT PROJECT

- Select suitable Pilot.
  (maximum 6 months duration)
- Arrange training
  users/ISD resources.
- Review of deliverables --
  Representatives from:
  Client community and
  ISD staff.
- Develop associated standards
  and procedures.

Pilot Product

Information Systems
Delivery Series
(Productivity Plus)

DMR Group Inc.

Productivity Plus

Advantages

- Product is integrated
- Systems Maintenance is integral part
- Users role/responsibilities are defined as a separate document
- Considered more than a methodology -- product is considered a *System Development Environment* guide
- Supported locally

Benefits

ISD

- Improved Quality of projects and products
- Consistency of approach, practice, and terminology
- Career development opportunities
- Upgrade staff skills sets

Benefits

Corporate

- Improved client understanding of the System Development Environment (User Guide and training to be made available)
- Standardization of development practices
- Increased productivity thru methods/tools/techniques
- Use of methodology under Corporate licence at no additional cost
- Common language (ISD/Client)

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

I. S. D. ACTIVITIES REPORT

Moderated by Robert Ellis
Acting Executive Director
Information Systems Division
Supply and Services

Participants
Rod Mills, Director, Technology Strategy and Evaluation
Danny Keizer, Manager, Communications Project
Bill Hall, Director, Support Services

INFORMATION TECHNOLOGY CONFERENCE

November 2, 1988

Danny Keiser, Communications Manager

Data Network Project Status Report

Most of the information presented in this document is not new -- it was previously communicated to Clients and employees of the Information Systems Division. For more background information see the article entitled "Data Network Project Update" in the July-August issue of the ISD Journal.

Intent

To examine the feasibility of implementing a single network useable by all Departments for data communication services on a province-wide basis.

Provided that a suitable approach is found, see it through to implementation.

Requests for Proposals Issued

Two requests for proposals were issued in late July, one for Networking Equipment and Services, the other for Protocol Converters.

The original closing date was September 9 but was extended to September 30 at the request of several vendors.

Network Proposals Received

EDA Instruments Inc.

> Private X.25 packet switched network with switches distributed throughout the province. PADS used for all traffic types with the exception of X.25.

GNX (Gest Network Xpertise) Inc.

> Private X.25 packet switched network with switches distributed throughout the province. PADS used for all traffic types with the exception of X.25.

Motorola Information Systems

Private network capable of accommodating all traffic types described, with concentrators/switches distributed throughout the province. Involves the use of statistical multiplexors, X.25 switches and PADS.

NBTel

A virtual private network. All equipment (with the exception of data sets) owned by the phone company. Monthly charges apply for all services. Involves the use of X.25 and BCS Datapath services.

STRTC

A private network supporting all required protocols. A single node in Fredericton with concentrators in regional locations.

Unisys of Canada Ltd.

A private network of Timeplex X.25 switches and Unisys DCP processors. All protocols supported. Backbone traffic is X.25

Protocol Converter Proposals Received

IBM Canada Ltd.

For IBM hosts, a "software" solution that does protocol conversion in the Front End Processor/Host for async workstations attached using X.25.

Unisys of Canada Ltd.

For IBM hosts, JBM protocol converters and Timeplex TRU/BLU protocol converters.

For Unisys hosts, JBM protocol converters.

Evaluation Process

1. Pre-screening

Involved the use of pre-defined criteria to eliminate "bad" proposals at an early stage.

The GNX Network Proposal and the IBM Protocol Conversion Proposal failed to meet the criteria and were screened out.

2. Rating according to functionality and quality

Involves the use of a rating model to assign an empirical value to the functional and technical quality of each proposal.

Currently underway, this process should be complete by November 10.

3. Cost Analysis

Involves the use of costs quoted by vendors to establish the total cost of implementation and operation of each proposal over a three year period.

This process should be complete by November 24.

4. Selection of Recommended Proposal and Feasible Alternatives

Based on the results of rating and cost analysis processes, one proposal will be recommended as the preferred alternative. Other acceptable proposals will also be identified along with their deficiencies relative to the preferred alternative.

This process should be complete by November 30.

Vendor presentations may contribute to the decision. Presentations to clients will be encouraged. Separate presentations to the evaluation committee may be required.

5. Recommendations to Supply and Services, Information Systems Division senior management.

The preferred alternative and implementation recommendations will be presented to Senior management for their decision regarding further action.

Observations

It appears that we have received some good proposals.

There is a wide range in projected costs -- from $375,000 to over $1,500,000 plus line costs for privately owned solutions, over $1,000,000 per year for NBTel's rated services.

Pilot Implementation

A "trial" implementation to verify that the approach selected meets requirements. Will require client involvement in some cases. Targeted to begin in January 1989 and finish by March 31, 1989.

Phased Implementation

Implementation of the selected approach on a province wide basis. Beginning early next fiscal year, should take between 1.5 and 3 calendar years (depending on the approach selected).

Current Project Team

Gordon Boone, Software Consultant with Data Centre Services, ISD

Drew Ingraham, Communication Analyst with Data Centre Services, ISD

Danny Keizer, Communication Projects Manager with Technology Strategy and Evaluation, ISD

Marc Bage, Senior Consultant with DMR Group Inc. (quality assurance only)

(Jeff Bourque of Data Centre Services, ISD was involved in the early stages of specification preparation.)

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

DATA CENTER SERVICES AND FACILITIES

Prepared by Data Center Personnel
Information Systems Division
Supply and Services

Delivered by
Gary Andrews, Operations Manager
Jeff Bourque, Technical Support
Rick Powers, Technical Support

DATA CENTER PRESENTATION

INTRODUCTION

Good afternoon, my name is Gary Andrews and I am the acting director of Data Center Services. This Data Center presentation will briefly cover:

* Our past history, that is how we evolved to what we are today;
* How we are currently organized;
* What services we presently offer;
* The near future, that is what changes the next 12 to 18 months may bring; followed by questions & answers; and
* Finally, a brief overview of the "demos" which are an integral part of our session this afternoon, after this overview, we invite you to join us for these "demos" in the adjacent room.

The Data Center is part of the Information Systems Division which is a central services agency within the Department of Supply and Services providing all aspects of information processing services to government departments and agencies as requested. The Data Center oversees the operation of a central computer utility which utilizes three large computers - a UNISYS 1100/92 for general computing; a UNISYS 1100/72 for fourth generation language, Mapper, computing; and an IBM 4381. The second Data Center function is to oversee the government's voice communication services. Coupled with these computers are many complex software products and a communications network to provide a wide range of computer and communication services to our clients which include most government departments, and to our internal staff who require these services to properly serve the client community.

Today the Data Center has a staff complement of 70 positions and an over all budget of $12+ million dollars.

PAST HISTORY

Prior to 1967, the beginnings of the Data Center were in the Department of Finance. The computer used was an IBM 1401; all data was on cards and jobs were processed serially, one job at a time. We were located across from the centennial building.

In 1967 the IBM 1401 was replaced by a General Electric 415 computer that processed data on tape; and jobs were processed serially, one job at a time. The initial property tax system and the first FIS system were put into production. During this time we were located on the ground floor of the centennial building.

In 1969 a General Electric 425 computer which was a faster version of the 415, was added to our 415 computer. We still processed data on tape; and jobs were processed serially, but with two computers we could run 2 jobs at a time. A Consumer Tax system was put into production; to be followed in a year by the first Medicare system.
In 1971 after a competitive evaluation of new equipment to replace the two General Electric computers, we benchmarked three vendors Unisys, then named Univac, Honeywell, who took over GE computers, and CDC; from seven vendors who made proposals. The Data Center selected a Univac 1106 multiprogramming computer that could run many jobs at once and processed data on disc. More than a year was spent in converting to the Univac 1106. The Data Center was transferred to Supply and Services at about this time.

In 1978 after considering a proposal to convert to IBM, it was decided to replace the UNIVAC 1106 computer with a UNIVAC 1100/80 computer which was the top of the line at that time. Just prior to 1978 we installed the first terminals for program development and in the late 70's the first Database system for Vehicle Registration was put into production with terminals for clients. Our data communications network consisted of 4 lines and 45 devices.

In 1981 the Data Center was relocated to the 6th floor of the Centennial building and we upgraded to a SPERRY 1100/82 computer. Just prior to this in 1980, both a new Medicare system and a new FIS system were put into production. These were followed in 1981 with a new Property Tax system and a new payroll system, GENSYS. Our data communications network consisted of 16 lines and 102 devices.

In 1983 the Data Center upgraded to a SPERRY 1100/83 computer. Just prior to this in 1982, a Social Services on-line system was put into production to be followed in 1983 by a new Consumer Tax system and a Justice information system. Our data communications network consisted of 22 lines and 246 devices.

In 1984 the Data Center added a SPERRY 1100/72 computer to our 1100/83 computer, to handle MAPPER processing. Our data communications network consisted of 32 lines and 386 devices.

In 1985 the Data Center was relocated to Marysville Place. We replaced the SPERRY 1100/83 computer with a SPERRY 1100/92 computer and added an IBM 4381. Our data communications network consisted of 37 lines and 476 devices.

As you can see our history has been one of continual change in our endeavor to keep up with changing technologies and to provide an effective central processing computing facility. In late 1988 the Data Center is negotiating a substantial upgrade to our Unisys 1100/92; is experiencing volume growths in our major service components of about 5% a year; and our data communications network consists of 65 lines and 1005 devices.

CURRENT ORGANIZATION

The Data Center is headed by a director Danny MacCallum, who is not able to be with us, and is organized into four branches:

* Data Preparation with Judy MacWilliam as manager;
* Operations with Gary Andrews as manager;
* Technical & Operational Support with Shirley Totten as manager; and
* Voice Communication Systems with Steve McDonald as manager.

The Data Preparation section is organized into 5 groups;

* Input / Output with Shirley Ward as supervisor;
* Cade Data Entry with Shirley Ward and Beth McDermott as supervisors;
* Optical Character Recognition with Beth McDermott as supervisor;
* Wang Support services with Gloria Stewart as lead hand; and
* Programming Support Analyst with Gladys Bartlett.

The Operations branch is organized into 5 groups:

* Production Control with Ernie Ackerson as supervisor;
* Computer Room with David Smith as supervisor;
* Terminal Control with Hilly Booker as supervisor;
* Data Communications with Drew Ingraham; and
* Client Services with Myrna Tweedie.

The Technical & Operational Support branch is organized into 3 groups;

* Unisys with Jeff Bourque as lead technical analyst;
* IBM with Rick Powers as lead technical analyst; and
* Systems performance and monitoring with Gordon Boone as lead technical analyst.

PRESENT SERVICES

INTRODUCTION

This will be a listing of services, a more complete description of the services listed can be found in the Data Center Services description document which was included as part of this conference handout and which is available at the Data Center Information booth in the "demo" room. This document will also be included in the Information Systems Division Services Description book which will have an updated version mailed to our client community as soon as it is back from the printers. We encourage clients to discuss any details of our services with the managers.

DATA PREPARATION

The Data Preparation section provides the following services:

* Input / Output control;
* Cade Data Entry;
* OCR Input;
* Wang Support;
* Text Entry;
* Document Conversion;
* Data Media Conversion;
* Wang OIS / Alliance support;
* Training Support Services; and
* Programming Support services for Cade and OCR.

OPERATIONS

The Operations Branch provides the following services:

* Production Management;
* Computer security administration;
* Computing Utility;
* Tape Library Management;
* Computer Output Distribution;
* Microfiche service;
* Client services; and
* Data Communication network services.

TECHNICAL & OPERATIONAL SUPPORT

The Technical & Operational Support branch provides the following services:

* Software Installation and Support;
* Consulting and problem Resolution; and
* Performance Monitoring and Capacity Planning.

VOICE COMMUNICATION SYSTEMS

The Voice Communication Systems section provides the following services:

* telephone network planning;
* analysis of telephone tariffs and rate structures;
* mobile communications; and
* voice messaging systems.

THE NEAR FUTURE GIVEN BY JEFF BOURQUE.

NEAR FUTURE

Introduction

I would like to move along now to the future of the Data Centre -- more to the point, the future of the services provided by the Data Centre. I will be covering the 4 major areas of the Data Centre, namely Voice Communications, Data Communications, Unisys Hardware, and mainframe software, both for the IBM and Unisys systems. But before I do I would like to introduce you to the people responsible for these areas.

Steve McDonald Voice Communications
Drew Ingraham Data Communications
Rick Powers IBM Software
Jeff Bourque UNISYS Software

These people will be here for this presentation and after I have finished, they will be more than happy to answer any questions you have.

Data Communications

First, let's take a look at what we can expect in the data communications area in the next year or so. The most striking thing here is the growth factor. We expect to see an increase of about 20% in the number of installed terminals. This will mean about 200 new terminals and around half of these will have printers attached. Of these, probably 150 will be Personal Computers. If you are interested, you will have a chance to see PC's as terminals in the demo area a little later on.

In order to accommodate this growth, the network will have to expand to handle the extra traffic. We are always looking for newer, faster, and cheaper ways of shipping data throughout the province. One avenue that we are looking into is a technique known as multistreaming. This would allow us to combine a number of our current data lines into one, higher speed backbone circuit, and save some money on the NBTel line charges. If you have done the mental math already, you know that a 20% increase that results in 200 new terminals means we are currently servicing around 1000 terminals -- actually 1005, at last count. But it is getting harder and harder to count them all, and track their serial numbers, and their PID numbers, and their locations, and their RIDs and SIDs and so on. To this end, we are currently implementing a system known as CATS, or Computer Assets Tracking System. We hope that with this system, we will be able to provide our clients with more accurate listings of terminal equipment by location or system mnemonic quicker than ever before. Of course, this system will provide us with a much better handle on our installed inventory.

We are looking into other network management systems as well. NMS modems will allow us to log network utilization on-line. A large number of these systems will allow testing of the network equipment from the Terminal Control Centre. This should shorten down time by allowing the staff in Terminal Control to pinpoint a problem down to a specific component, such as a modem. We have also embarked on a 6 month trial period with NBTel to acquire an SMC, or Service Management Concept, technician to service the Fredericton area. This should provide an increased level of on site service and eliminate a great deal of the administrative work by both NBTel and ourselves. Of course, we are continually evaluating our dial-up services. A constant concern in this area is that of security.

Currently, we provide protocol conversion for a variety of terminal types through the use of a JBM protocol converter. This allows dial-up access to the Unisys 1100 machines. We are planning to increase the number of these kinds of accesses and also provide support for 2400 baud Async dialed access.

Voice Communications

But the computer terminal is not the only way to communicate over the telephone lines. Remember this guy? (hold up a telephone handset) ... the old fashioned way. Well, it is not so old fashioned any more. (put handset down) The Voice Communications branch has been overseeing the installation of Digital Customer Group systems in the major centres of the province. The new digital technology has transformed the ordinary telephone into a sophisticated business tool capable of all kinds of special functions. Features like call forwarding and speed call have allowed user departments to operate with greatly improved efficiency.

These systems are known as DMS, which is short for Digital Multiplex System. Currently Fredericton, Saint John, Moncton, Bathurst, and Sussex are served by this new technology. Within the next 12 to 18 months, the DMS service will be installed in Edmundston, Campbellton, and Richibucto. Eventually, the entire province will be served by digital switching.

And as if the new installations are not enough, we are continually upgrading the services already in place! For example, we are anticipating a new service on DMS called Message Centre which allows an answering station to activate a signal light on a private office phone, telling the user to call a message centre or the secretary for a message. Another feature we are planning to implement is Automatic Call Distribution. This provides for computer answering of incoming calls for busy overflow. High volume incoming call offices such as the N.B. Inquiry Service, the Department of Health and Community Services, and the Department of Income Assistance will appreciate this feature. A new service, which is now available all across North America, called Exten Voice Message Service is being evaluated in the Information Systems Division and may soon be available to all departments. It combines the store and forward benefits of electronic mail with the convenience, speed, and efficiency of the telephone. Telephone and computer services are coming closer together all the time.

Which brings me to my next topic -- computers. More specifically, the IBM and Unisys mainframe computers that the Data Centre is responsible for. What does the future hold for these machines?

UNISYS Hardware

We are currently negotiating a significant upgrade to the UNISYS computers. This is a complex proposal presently being "piloted" through both government "seas" and UNISYS "waters". We hope to see a successful completion of these negotiations very soon. Additionally, we have received an interesting preliminary proposal from XEROX to change our "print" from our present line printers to two high speed XEROX laser printers. We hope to be discussing this possible "print change" with our clients in the near future.

IBM Hardware

We are awaiting the government's direction on our IBM hardware.

Software, IBM & UNISYS

We have, however, been very busy with system software upgrades on the IBM. System software is all of that stuff that the rest of us know as simply "the computer". Operating systems, utilities, compilers, security systems, and others are being continually refined and released to the customers by IBM. In order to stay ahead of the game, the Technical and Operational Support group working on the IBM system have these kinds of software upgrades scheduled far into 1989. Most notable is a new version of the MVS/XA operating system.

By the fall of 1989, the operating system on the IBM will have been upgraded to MVS/XA level 2.2. In the process, a number of other software products will have to be upgraded to new levels in support of MVS/XA 2.2. ACF2 (Access Control Facility), RMF (Resource Management Facility), DFP/XA (Data Facility Product), and JES2 (Job Entry System 2) will all be upgraded. These upgrades to the 4381 will position us for the installation of a product known as DFSMS, or Data Facility Storage Management Subsystem. This product should automatically handle a lot of the data and storage management tasks currently being done manually. It should also provide a more structured environment, allowing us to migrate with greater ease to newer DASD in the future.

A similar exercise is underway on the UNISYS mainframes. In fact, this kind of exercise is an ongoing function of the Technical and Operational Support staff. Regardless of other activities, there is always a new piece of the "System Software Pie" to be installed, tested, or fixed. Here again, the schedule of activities stretches into the next decade. Within the next few months, System Base Release 2R2 will be installed on the UNISYS 1100/90 and shortly thereafter, on the 1100/70. The System Base Release concept involves releasing to the customer (that's us) all of the software required to run the system at once, rather than as each piece becomes available. All of the different software components have been tested functioning together as a unit. We will be following this concept, installing the SBR as a single unit -- more than 50 software products from the operating system down on through network software, compilers, utilities, editors, and so on. This is in contrast to previous installations, where each software product was installed separately. Once the installations are complete, SBR 2R2 will allow us to proceed to the installation of new products on the UNISYS computers; namely IPF 1100 and NPE.

IPF 1100 stands for Interactive Processing Facility. This product should prove to be extremely valuable, both to our own applications developers and to our clients. It provides an interactive, English like interface to the system for demand mode users. The IPF 1100 language closely reflects the current state of command language standardization in progress within the CODASYL Common Operating System Command Language Committee. IPF supports EDIT 1100 -- a full screen text editor, comprehensive on-line help and tutorials, an SQL interface to the relational database, and many other new products. We are expecting some "great things" from the IPF suite of products in the near future.

NPE, on the other hand, represents a more aggressive move towards newer and better ways of doing business. NPE stands for the New Programming Environment. With these products, we will essentially be altering the basic tools with which we build programs. With new compilers for COBOL, FORTRAN, Pascal, and C, a run time linking system, and advanced symbolic debugging capabilities, we hope to be making the most of the computing horsepower available on the 1100/90 series and later models. The first installation of NPE will only involve the batch environment, with TIP processing capabilities to follow. In any case, the New Programming Environment can coexist with the way we do things now; what UNISYS calls TPE, or the Traditional Programming Environment. For those of you who receive the ISD Journal, look for a series of articles on NPE over the coming months.

But UNISYS is not the only source of system software for our 1100 machines. For instance, the TIP Transaction Security System (more commonly known as TTSS) was written in house. Just recently we saw the completion of a three year project dedicated to re-writing the product to meet the needs of a booming growth in the number of users. This new version of TTSS is currently being implemented across government and should be completely in place within 6 to 8 months. Within the next year, more enhancements are planned for TTSS; improvements in the message of the day screens, better report generation capabilities, and more security features.

Another source of system software is the third party vendor. We have recently purchased two new products via this route; RLIST and EDITOR+. RLIST is a comprehensive file handling tool which will produce formatted dumps of every type of file known to the 1100 machines. EDITOR+ is a full screen editor designed with programmers in mind. Both of these products have contributed to our overall productivity. We are also evaluating a number of CASE tools (Computer Assisted Software Engineering) toward this same end.

Summing Up

In conclusion, I would like to say that the future of the Data Centre looks bright. Although we cannot always say with certainty what new products or services the Data Centre will be offering tomorrow, we can be assured that today will be evolving at a rapid and (for those of us involved) an exciting pace.

THE DATA CENTER DEMOS OVERVIEW GIVEN BY RICK POWERS

DATA CENTER DEMOS

Terminal Control

Here, you will be able to see some of the daily activities and functions of the Terminal Control staff. As usual, they will be taking calls from clients, and assisting them with terminal and data communications problems.

Operations Console

We have installed for this demo, a terminal in console mode. You will have a chance to see just what goes on in the way of system activity on the UNISYS 1100 machines, with all of the messages and functions associated with running a large mainframe computer. One of the computer operators will be on hand to answer your questions

Dial-up Modem and Terminal

Here, we will be demonstrating equipment available for short term loans to dial up to the 1100 machines. This is a 2400 BPS synchronous modem and terminal. Hilly Booker will be available to show you how this equipment can be used to do off site demos, or anything requiring a temporary terminal.

PDS 1100 (the Performance Display System)

This is a very interesting look at one of the new tools that Technical and Operational Support will be using to monitor the performance of the UNISYS 1100 machines. It uses colour graphics displays to graph the utilization of system resources.

New TIP Transaction Security System

The new version of TTSS will be implemented across government very soon. Although this is not a visual demo, the author of the system, Jeff Bourque will be available to answer any questions you might have about TIP security.Network Planning ... Utilization and Client Charge-back

A look at how the increasing number of terminals, printers, and PCs have affected the network design over the last ten years. Also, a look at how the Data Centre is charging clients for network services. Drew Ingraham will be on hand to answer your questions.

UNISYS Remote Printer

This will be a demonstration of a small and quite remote printer to the UNISYS computer, using a laser printer.

IBM Job Tracking System

This will be a demonstration of the SDSF, or System Display and Search Facility. I will be showing you how this IBM product allows applications programmers to track their jobs throughout the computer system. As well, you will have a chance to take a look at RMF III, the Resource Measurement Facility used by the IBM systems programmers.

Voice and Emergency Communications Equipment

Steve McDonald will be on hand to show you our emergency communications equipment. The equipment is used by government departments in an emergency to set up links to telephone and radio networks where none would normally exist. As well, Steve will be demonstrating the interactive video training associated with the DMS service.

The Technical Support HELP! line will be located in the demo area on the afternoon of November 2, 1988; clients are welcome to drop by.

FINAL COMMENTS AND INVITATION TO JOIN US AT THE DEMOS

The demos are in the next room and we are just about ready to break. In case you missed it, there will be an information booth staffed by myself (Gary Andrews), Shirley Totten, Judy MacWilliam and Steve McDonald.

The last comment that I would like to make is on the one future that I personally (and everyone else in the Data Center) wants more than all others combined. That is the return of Danny MacCallum, Director of Data Center Services. When ever anyone thinks of the Data Center, the first person that comes to mind is Danny. We hope and expect him back soon.

WE ARE NOW BREAKING TO THE DEMOS, WE INVITE YOU ALL TO JOINS US.

THANK YOU

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

INFORMATION SECURITY RISKS AND SAFEGUARDS

Superintendent John R. Religa
Protective Policing Directorate
R C M P

INFORMATION SECURITY:

RISKS AND SAFEGUARDS

Supt. R.E. Religa
Deputy Director, Protective Policing
(Departmental Security)

Nov. 1988

TECHNOLOGICAL TRENDS

The continued movement of information technology into the office environment is more readily apparent each year. The growth in the area of office automation, with particular emphasis on local area network systems, is going to continue unabated. The move away from the typewriter is for the most part complete. The majority of document preparation in offices is being accomplished through the use of word processor software packages installed on microcomputers. Also, the trend is away from centralized mainframe computer systems to more decentralized regional database systems. The unintelligent terminal accessing a mainframe or minicomputer has, in most cases, been replaced by microcomputer workstations. The consequence has been a much greater security exposure and threat to information assets. This exposure is increased with the introduction of the laptop computer.

THE CONCERNS

There is a continuing increase in the threat to EDP resources in all areas. This threat results from the increasing trend towards computer literacy throughout society, including the criminal element. During the past year, there have been numerous attacks on Canadian computer systems. A significant number of incidents have involved attacks on systems through some sort of public

communications access, such as telephone dial-up lines. These attacks have originated both from within Canada and from foreign jurisdictions. It is felt that these threats to EDP systems will continue to grow in conjunction with the extended use of computer systems in the public and private sectors.

When an institution's data processing is centralized in a large computer centre, it is easier to provide appropriate safeguards as responsibility usually lies with one manager responsible for security. Today, with the move from centralized mainframe computer systems to office automation, responsibility for safeguarding an institution's assets has shifted to individual office managers throughout the institution. My purpose today is to discuss what managers can do to ensure an institution's information assets are adequately safeguarded.

INFORMATION - AN INSTITUTION'S MOST VALUABLE ASSET

We have come a long way since the time when an institution's important assets were its inventory on hand and currency in the bank. Information has now become the most important asset of an institution. Consider the impact in the following situation if the information in the system was no longer available or had been corrupted.

1. Airline - reservation system

2.	Law Enforcement agencies	-	criminal record and wanted person systems
3.	Space Shuttles and Aircraft	-	guidance systems
4.	Financial institutions	-	savings and checking accounts
5.	Companies	-	accounts receivable

Consider what you would do in your own environment if you lost all of your information assets or the information was modified without your knowledge!

Protection requirements for sensitive information are based on the need to preserve:

- confidentiality, eg. personal or proprietary data;
- integrity, eg. financial data, computer programs; and
- availability, eg. airline reservation system.

Threats to information result from unpredictable environmental factors and people. Threats can be grouped into five classes (see Appendix No.1):

- destruction
- disclosure

- removal or loss
- corruption, and
- interruption

Each of these classes can be further sub-divided as accidental or deliberate.

EDP SECURITY PROGRAM

The following areas should be addressed by managers when implementing a security program:

1. Threat Assessment (See Appendix No.2)
2. Security Screening
3. Security Awareness
4. Termination Procedures
5. Access Control
    - Security Zones
    - Security Containers
6. Fire Protection
7. Waste Disposal
8. Software Controls
    - Access
    - Authentication
    - Unauthorized Software
    - Development & Changes
    - Data Security Field

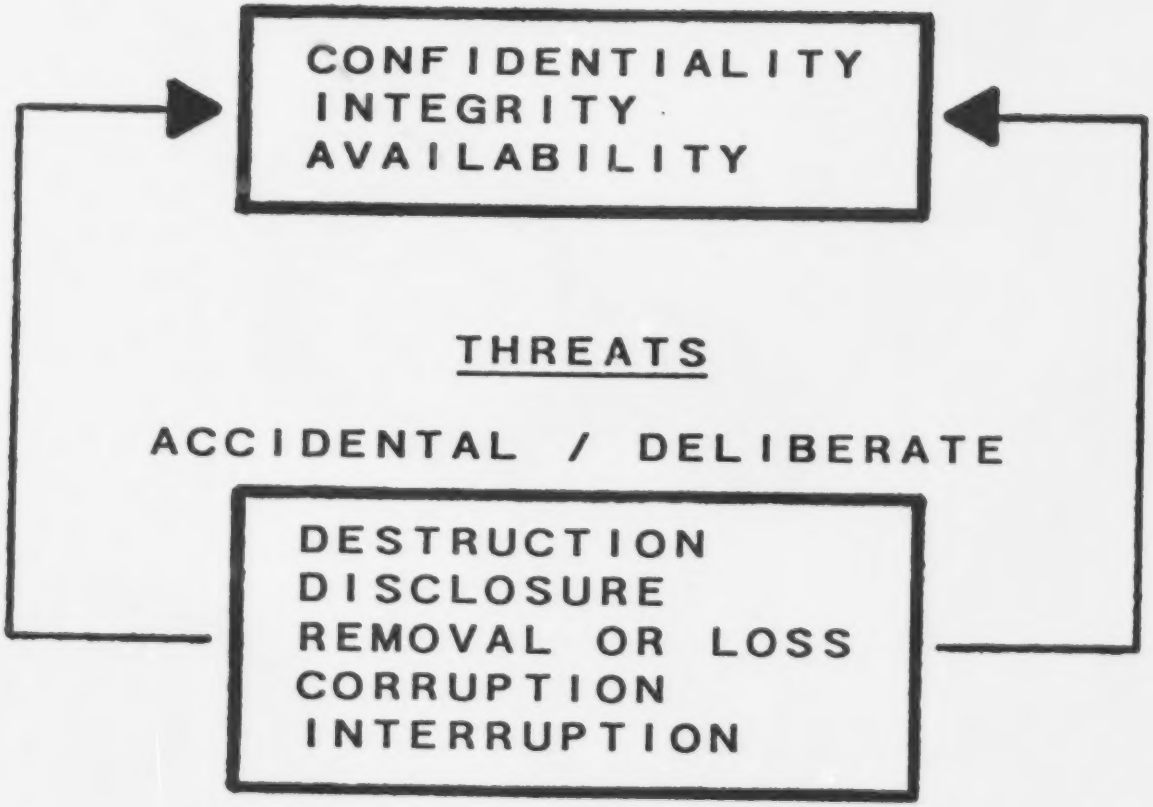
9. Hardware Controls
   - Access
   - Location
   - Maintenance
10. Laptop Computers
11. Restrictions on Dial-Up Communications
12. Storage Media
    - Inventory
    - Marking
    - Security
    - Backup
13. Policy & Procedures
14. Contingency Planning

CONCLUSION

There is a saying that "A computer is no better than its program". I draw an analogy to this when I say "Security is no better than the manager responsible for it".

INFORMATION

SENSITIVITY



APPENDIX NO.1

STEPS IN CARRYING OUT A GENERAL THREAT ASSESSMENT

1. **Identification of Assets**

    1. **Sensitive Information**

    2. **Negotiable or Cash Assets**

        1. Only major or significant assets, eg. petty cash, licence fees, funds collected on behalf of the government when the total amount exceeds, on average $500.

    3. **Valuable Assets**

        1. Items that may be likely targets because of their value, eg. desktop computers, word processors, etc.

    4. **Personnel**

        1. Employees, clients, etc.

    5. **Services and Programs**

        1. Power Supply, computer services, etc.

2. **Identification of Threats**

    a. Identify the perceived threat against each asset as being in one of the following categories:

        1. destruction;
        2. disclosure;
        3. removal, theft or loss;
        4. modification; or
        5. interruption.

NOTE: Threats can be accidental or deliberate in nature.

b. Describe threats against assets in detail, using the standard questions "who", "what", "when", "where", "why", and "how". Pay close attention to situations when the asset is most vulnerable, eg. during silent hours, or when it is in transit.

3. **Evaluate the Likelihood of a Threat Occurring and the Operational Impact if it does.**

a. When the threat is identified, evaluate the likelihood of the threat occuring in terms of "low", "medium" or "high".

b. Express the consequences of the threat occurring as "not too serious", "serious", "very serious" and "exceptionally grave".

4. **Appraisal of Existing Security Measures**

a. Evaluate security measures that are in place, as follows:

1. completely satisfactory;
2. satisfactory in most aspects, with some minor deficiencies;

3. questionable, some aspects have not been assessed; or

4. unsatisfactory.

b. Provide brief explanatory comments on each item.

5. **Preparation of the Written Threat Assessment**

a. Complete a written threat assessment report following the format shown on page 4.

PREPARATION OF A THREAT ASSESSMENT

ASSET	LOCATION	THREATS	LIKELIHOOD/IMPACT	APPRAISAL OF EXISTING SECURITY MEASURES
THIRD PARTY BUSINESS INFORMATION (4 CABINETS)	MAIN OFFICE	B.E. & THEFT	LOW/EXCEPTIONALLY GRAVE	BUILDING ALARMED AND ALARM MONITORED BY OPERATIONS CENTRE IN BASEMENT. ALL DOORS AND HARDWARE MEET APPROVED STANDARDS.
		THEFT BY CLEANING STAFF	LOW/EXCEPTIONALLY GRAVE	CLEANING IS DONE DURING WORKING HOURS. POLICY REQUIRES THAT EMPLOYEES SECURE SENSITIVE INFORMATION WHEN LEAVING WORK AREA. SUPERVISORS ENFORCE "CLEAN DESK" POLICY.

E.D.P. SECURITY BULLETIN

BULLETIN SUR LA SÉCURITÉ DE L'INFORMATIQUE

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INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

INFORMATION SERVING MANAGEMENT

Joe E. MacIntyre
Executive Director
Alcohol and Drug Dependency Commission

INFORMATION SERVING MANAGEMENT

by

Joseph E. MacIntyre
Executive Director
Alcoholism and Drug Dependency Commission
of New Brunswick

Delivered at the New Brunswick Government Information Technology Conference,

November 3, 1988

INFORMATION SERVING MANAGEMENT

Good morning Ladies and Gentlemen. I am very pleased to have been asked to speak at this important conference this morning on the theme "Information Serving Management". This presentation could just as easily be called, "How the Alcoholism and Drug Dependency Commission of New Brunswick uses its Client Information System as a Management Resource".

Before I move into the main part of my presentation about the Client Information system that we use, I think it would be appropriate to tell you a little bit about the Alcoholism and Drug Dependency Commission of New Brunswick. The Commission is a relatively small government department having about 200 staff and a budget of just over $7 million. But over the past 8 years, the Commission, with the help of the School of Computer science at the University of New Brunswick, has developed a sophisticated information retrieval system. This system has been built by using university research grants, the expertise of graduate students in Computer Science, the cooperation and support of the faculty of the School of Computer Science, and software packages that are readily available. In addition, we have been fortunate to have a number of graduate students work on the development of the Main Frame computer program for the system and they have provided really state of the art programmer services to the Commission.

The Alcoholism and Drug Dependency Commission of New Brunswick was established by the Lieutenant-Governor in Council in 1978. Its mandate is to provide a wide range of treatment, education, information, and research services to the people of New Brunswick. The overall day-to-day direction of the Commission comes from the Senior Management Team, which consists of the Chairman of the Commission, Dr. G. Everett Chalmers; the Executive Director; the Director of Community Services; the Director of Treatment Services; and the Director of Support Services. Most of the information-related activities are also situated at head office where we have an Addictions Library, an Information Officer, and a small research staff.

Outside of the head office environment, our organization has divided the province into five service delivery regions. Within each region, there is a Regional Coordinator responsible for coordinating the day to day delivery of a wide range of treatment, rehabilitation, education, information, and prevention services to residents of that area of the province.

In terms of the key services that we deliver in the province, perhaps the most commonly known to people are the in-patient treatment services. These are our detox units as well as our in-patient rehabilitation or 28 day programs. Within treatment services we also offer a wide range of out-patient services,

available from all of our seven centres in the province as well as through satellite offices. Additionally, we offer a wide range of education and prevention services to the community. These programs are employee assistance programs, education programs to teachers and school children, education programs for impaired drivers, safe grad programs and special programs to special groups such as seniors, the disabled, and so on.

One of the benefits that we have seen as a result of regionalization is that we are able to strive for a common standard throughout the province and at the same time, allow for innovative program development in individual regions to meet specific needs of that region.

THE CLIENT INFORMATION SYSTEM

Within the context of what I have just shared with you concerning our organization, it is clear that this type of organizational structure, having two levels of management, creates two different types of needs for management information. Because we are an agency of the Provincial Government, the Commission is accountable to the Government of the Province through the Minister of Health. Therefore, senior management requires information related to the volume of service that we provide such as: the number of clients served, bed days, occupancy rates and so on. These are required for budget and program planning at the head office or senior management level.

At the regional level, regional coordinators and their staff tend to be more interested in information particular to their own clientele. They are more interested in client profiles, occupancy rates for individual treatment programs, the volume of service provided on a local level and indicators of staff performance such as size of individual case loads, hours of service provided, and so on.

In 1978, shortly after the Commission came into being, it soon recognized that its need for information on the services provided could not be met with the very limited resources available. Consequently, the Commission approached the University of New Brunswick's School of Computer Science with a proposal that we would provide a research grant to the school to support a student research project. This project would be the development of an information retrieval system that could process and analyze demographic and behaviourial information from clients who were admitted to our in-patient facilities.

This was recognized by Professor Rod Cooper as an opportunity to give an excellent "real-life" experience to a number of graduate students. Since 1979 four master's theses in Computer Science have resulted from the development of this system. Over this

period of time, the objective that evolved for the system was to design and implement a user-friendly, user-oriented system that would allow the Commission to examine its collected data and generate reports for administrative and research purposes.

Until 1983, we used a very detailed type of data cc1lection form which gave management and staff a great deal of information. Much of it was not really very useful for management purposes other than to give us an indication of the volume of services we were providing.

In 1983-84, we began a re-design of our client information system. Our objective was to make it much more useable for management purposes and at the same time, have it give useful information for staff in the field. In terms of the nuts and bolts of our present client information system, it hinges upon basically four forms, and I will show you these at this time.

The first one is called "the Client Information Form". This provides demographic data on the people who come to our inpatient and outpatient services. By using the information from this form, we can develop profiles of individual clients and provincial profiles of the entire population using our services.

The next overhead shows the "Client Questionnaire Form" and this is completed on each individual each time they come in to our care. This is used as an update to the individual client's file. As you can see it shows information such as Admission date, the substance that they have abused, the contacts that they have had recently within the community resource network, and so on.

The next overhead shows you our third form which is called the "Client Service Record". This form is used in the outpatient department and it gives us a constant updating of our outpatient client files and tells us the time involved in providing that service and how it was provided.

The next overhead shows you the Community Services Contact Form. As I mentioned earlier, we provide a great deal of information, prevention and education services to New Brunswick. This form is completed by the people who deliver those services and provides information on how many people they deliver this service to and how long it takes. As you can see, these last two forms give us an opportunity to analyze the costs involved in providing services, whether they be to clients in treatment or in education and prevention.

The next overhead gives you an indication of how the forms flow through our organization. Within the Commission the individual staff person delivering the service is also responsible for

recording that service. Some people may regard this human element to be the weakest link in our whole information system. At the same time, though, it indicates that the organization must have a true commitment to this system throughout the organization or else the system will not work very well at all. We recognize this situation and we have responded to it in a number of different ways. In terms of error corrections, the regional researcher reviews the forms and they are also reviewed at head office. They are also reviewed by the system itself at the University of New Brunswick.

In the last year, we have developed an Information Systems Committee. This committee is chaired by the Director of Treatment Services and has as members, the Director of Support Services, the Coordinator of Research, the Researcher responsible for the maintenance of our system and Professor Rod Cooper. He is the person responsible for overseeing the Client Information System development at the University of New Brunswick.

This committee serves two important functions. The first is that it allows all of the key players involved in the development and management of the system to have a forum where they can discuss any issues related to the health of the Client Information System. Secondly, it places senior management in the role of being more exposed and involved in the workings of the system.

Information that comes from this process flows from the regions, through the research department at head office, then to the university, back through the research officers to the regions as well as to senior management. The information that we get from this system not only provides annual statistical summaries and regional reports, but it also provides us with the information to do special profile reports and other specific demand reports.

HOW DOES OUR MANAGEMENT TEAM USE INFORMATION?

I would now like to share with you some observations on how the management of the Commission uses the type of information that this system delivers. My observations on this matter are to some degree, similar to observations made by organizational analysts and by very successful firms such as IBM and Xerox.

It goes without saying that in today's management environment the need for an adequate quantity and quality of information is vital to making appropriate and successful decisions. When we look at senior management decision making in our organization I am sure that it is not that much different from what happens in yours. A lot of it occurs in an unstructured fashion, quite different from lower echelon decisions which are usually covered

by a great variety of procedures and guidelines and policies. It is a bit of a paradox that senior management decision making, vital to daily operations and long-term strategy, sometimes occurs on the basis of "gut feeling" and in a crisis situation. These are not altogether bad, but when these two factors become the "modus operandi" of any organization, then decision making reflects only the bias and attitudes of the very top of the organization. One way or the other this sort of decision making can't remain very successful for very long. Either stress or bankruptcy, especially in the private sector, resolves the situation for the organization.

So it becomes critical that senior managers augment their attitudes with solid information about what their organization is doing, to whom, and by whom an activity is being done, how much it is costing, when, where and why it is being done.

It is clear then, that it becomes very difficult to manage any organization's activity if we can't measure that activity. If we have a way to measure what we are doing, then the challenge of management takes on a different form. We do not get bogged down on daily details in isolation but we have the opportunity to look at these in consideration of well known objectives. These objectives are part of the group of strategic goals that make up the mission of the organization. When we have a situation in which everyone in the organization guides their work by the same compass, it actually becomes easier to manage. We do not end up managing an organization but giving leadership to people.

I would not want you to get the impression that because the Commission has this sort of a management information system, that it guides us or suggests the direction that we should take. Quite the opposite. It enhances, supports and/or challenges our decision making, our values and our attitudes. Rather than operating on gut feelings or even worse, in a vacuum, this data gives us an additional resource to access in the process of making a judgement. And the type of decisions we have to make in government are becoming more and more challenging in light of competing demands for diminishing resources.

For some time now, we have been trying to improve the productivity of our human resources. We have been challenged to improve the efficiency of the way we provide our services to the public. Partially, as a result of the client information system, we know that the Commission is quite efficient in delivering our mandate to the people in this province.

However, if we ask ourselves how effective is the Commission as an organization, then that is a question of a different dimension. Effectiveness is really a higher form of efficiency. If we do things faster or cheaper, then we are in fact more

efficient. However, being effective relates to how we use the resources that we have freed up by being more efficient in the first place. The management challenge is not so much doing things right or correctly, which is efficiency. Now the management challenge is becoming one of effectiveness. We have to choose the right things to do. If we are able to do that, then we are more accurately directing the resources of the total organization. We are not just reducing costs, but we are more effectively using these "saved" resources to achieve the goals that we have.

In this kind of environment, the information that we get from our system is critical in the process of making decisions aimed at enhancing the effectiveness of our organization. This is especially true when resources are at a premium. In government today, this is the primary challenge we face, and most of the time the Commission has had the information available to it when it has had to make difficult budget decisions.

USES OF THE CLIENT-INFORMATION SYSTEM

As managers within the Commission, we are continually thankful that we have the quality and quantity of information available to us when we approach the time of the year that we have to provide estimates to the house, an annual report to the Minister, or a budget proposal to the Board of Management. Because of the information from this system, we can get annual statistical reviews, and special reports to enhance our financial reporting system. Because of this information, we are able to analyze changes and trends in the population we serve, the number of patient days of service that we provide, and so on. We can also look at particular subpopulations, such as female admissions, youth admissions and seniors.

But in addition to these normal uses of an information system, we were very glad indeed that we had this system in 1985 when Cabinet Secretariat sent out a request that all government departments should evaluate their programs. Because of the capabilities of the information system that we had, we were able to respond successfully and quickly to this challenge. We felt this was very opportune, because we always felt we were doing a good job in the Commission, but now we had an opportunity to actually prove whether or not our feelings were grounded in reality. Thanks to the capabilities of the system and the people who make it work, the Commission was the first department of government to complete its program evaluation responsibilities.

As an outcome of this process, management was then able to confirm its belief system and managers are no different than anybody else. They appreciate very much getting validated and reinforced in the activities they are doing.

CONCLUSION

In conclusion, we at the Commission feel that our client-information system is a critical and essential factor in the operation of our organization. In fact, many times I have felt that I really don't know what kind of a situation we would be in, if we did not have this client information system in our back pocket. To make this essential factor work is probably the biggest challenge we face, because to make it work requires the cooperation of every one of the Commission's staff. It is necessary that the system be completely integrated into the daily operations of the Commission. It cannot exist as an appendix to the organization. It is like any other program that we offer; if it isn't continually fostered and supported, it will decay. We have discovered many times, that no matter how good the system might be in terms of programming and data analysis, the human factor is of critical and crucial importance.

We know that the information system must be responsive to the concerns of the primary care givers; in other words, the people on the front lines. We are also recognizing on a day to day basis that the regional coordinators in the Commission are a vital and key link in the system. Their efforts in encouraging staff to work with the system, to support it, and to use the findings in their planning process, are extremely important in enhancing the effectiveness of the Alcoholism and Drug Dependency Commission.

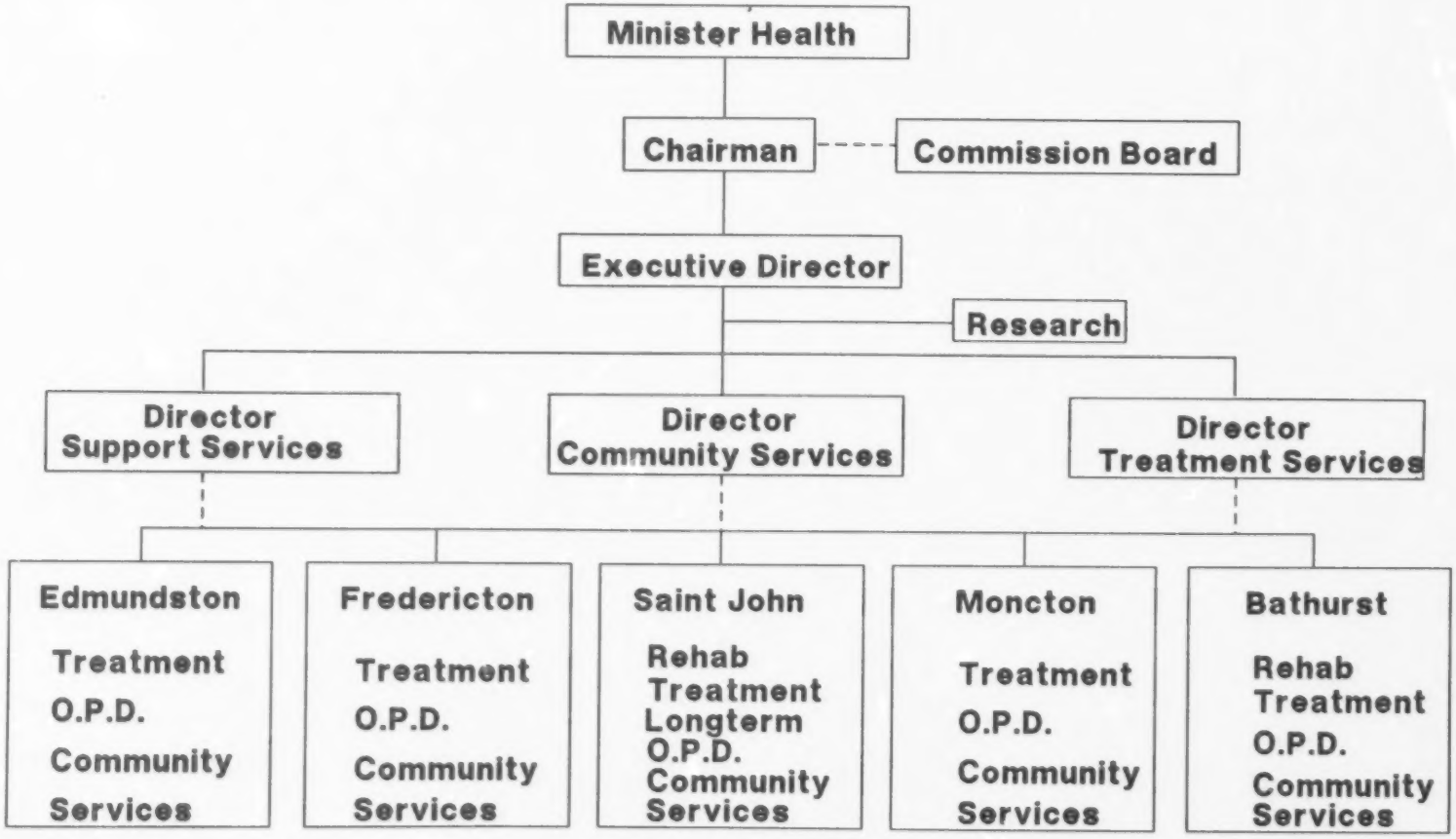
In summary, I would not want to leave you with the impression that this system is 100% perfect. Our system is still developing and changing as we gain experience in working with it. We continue to see its limitations but we are working on the development of changes and enhancements to improve the system. We believe that this system is one of the best database management systems in addictions in North America. Presentations on this system at national and international forums have generated much interest and praise for our efforts. I believe that we will use this information system to help us identify emerging trends, such as youth addiction and predict needs for future services so we will be more responsive to the needs of New Brunswick.

Eventuality, we want to remove paper from our system by moving into direct data entry via terminals. This way we would develop a more capable network between our centres in the province.

Our plan is to continue the relationship with the university, and to continue the evolution of this client-information system so that it will be of benefit to the Commission and to the clients that we serve.

Thank you very much.

ALCOHOLISM AND DRUG DEPENDENCY COMMISSION OF NEW BRUNSWICK



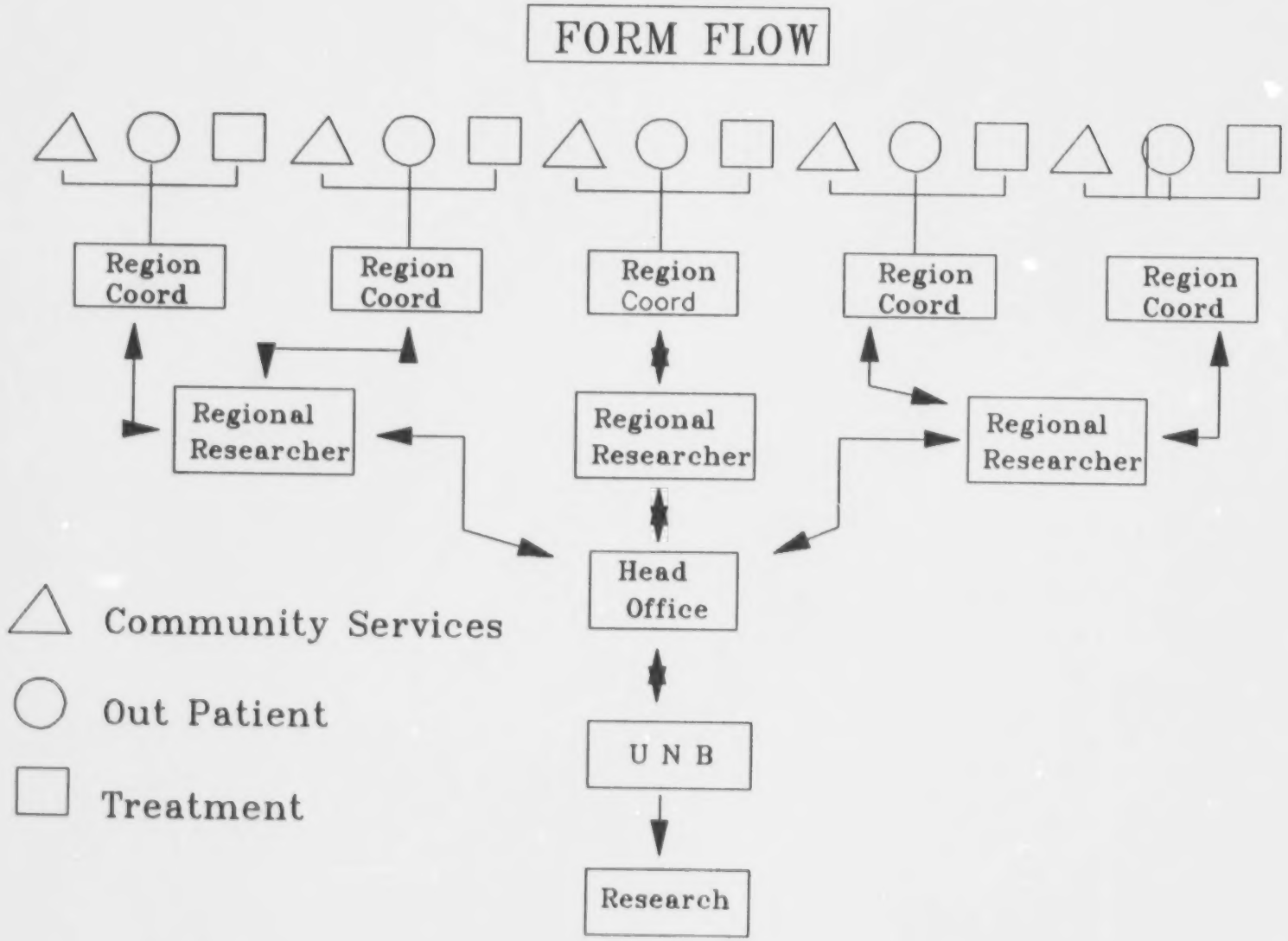
INFORMATION NEEDS

PROVINCIAL SENIOR MANAGEMENT	REGIONAL REGIONAL COORDINATORS
DEMOGRAPHICS	UTILIZATION BY LOCAL CLIENTELE
PROGRAM EVALUATION	PROGRAM MONITORING
BUDGET RELATED	BUDGET MONITORING
PROGRAM PLANNING	STAFF PERFORMANCE

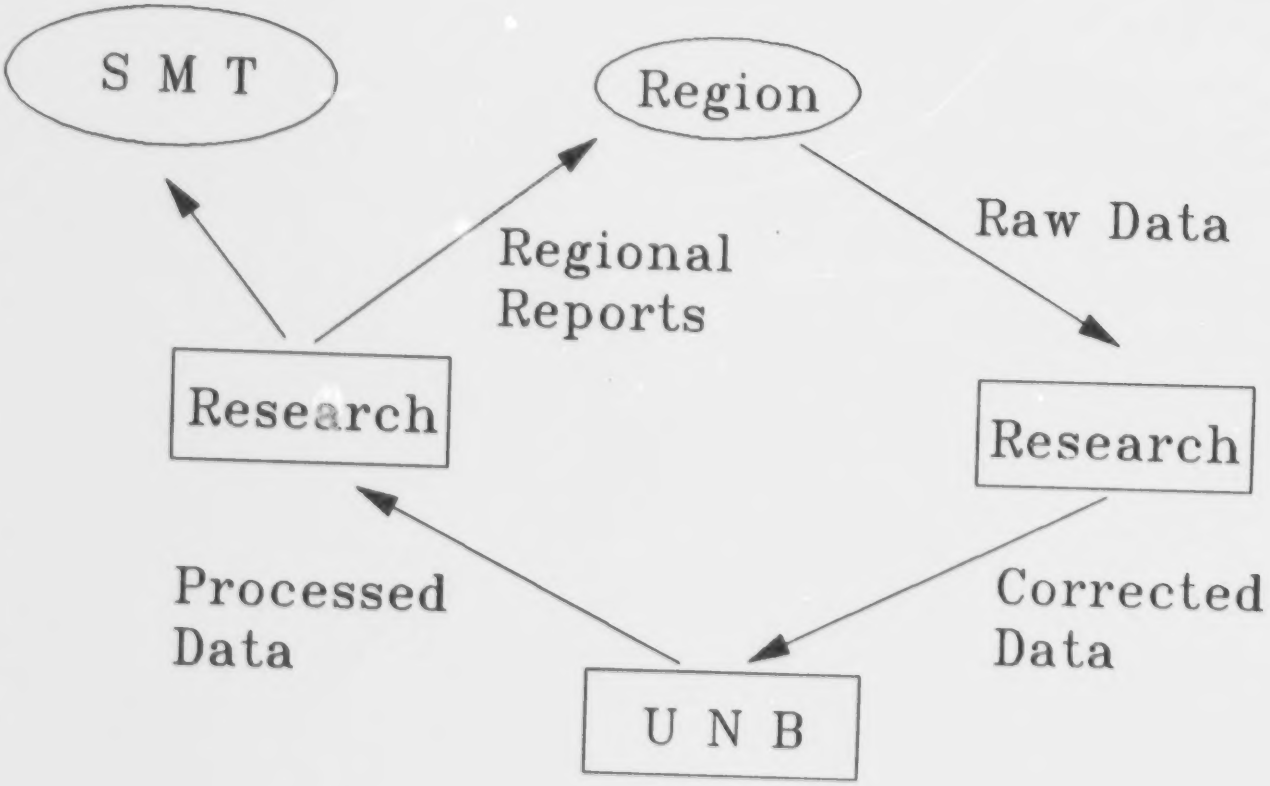
OVERHEAD 3

CLIENT INFORMATION SYSTEM OBJECTIVE

...THE OBJECTIVE FOR THE DEVELOPMENT OF THIS SYSTEM WAS " TO DESIGN AND IMPLEMENT A USER-FRIENDLY, USER-ORIENTED SYSTEM WHICH WOULD ALLOW THE COMMISSION TO QUERY ITS COLLECTED DATA AND GENERATE DEMAND REPORTS FOR ADMINISTRATIVE AND RESEARCH PURPOSES."


FORM FLOW
Region Coord
Region Coord
Region Coord
Region Coord
Region Coord
Regional Researcher
Regional Researcher
Regional Researcher
Head Office
U N B
Research
Community Services
Out Patient
Treatment

INFORMATION FLOW



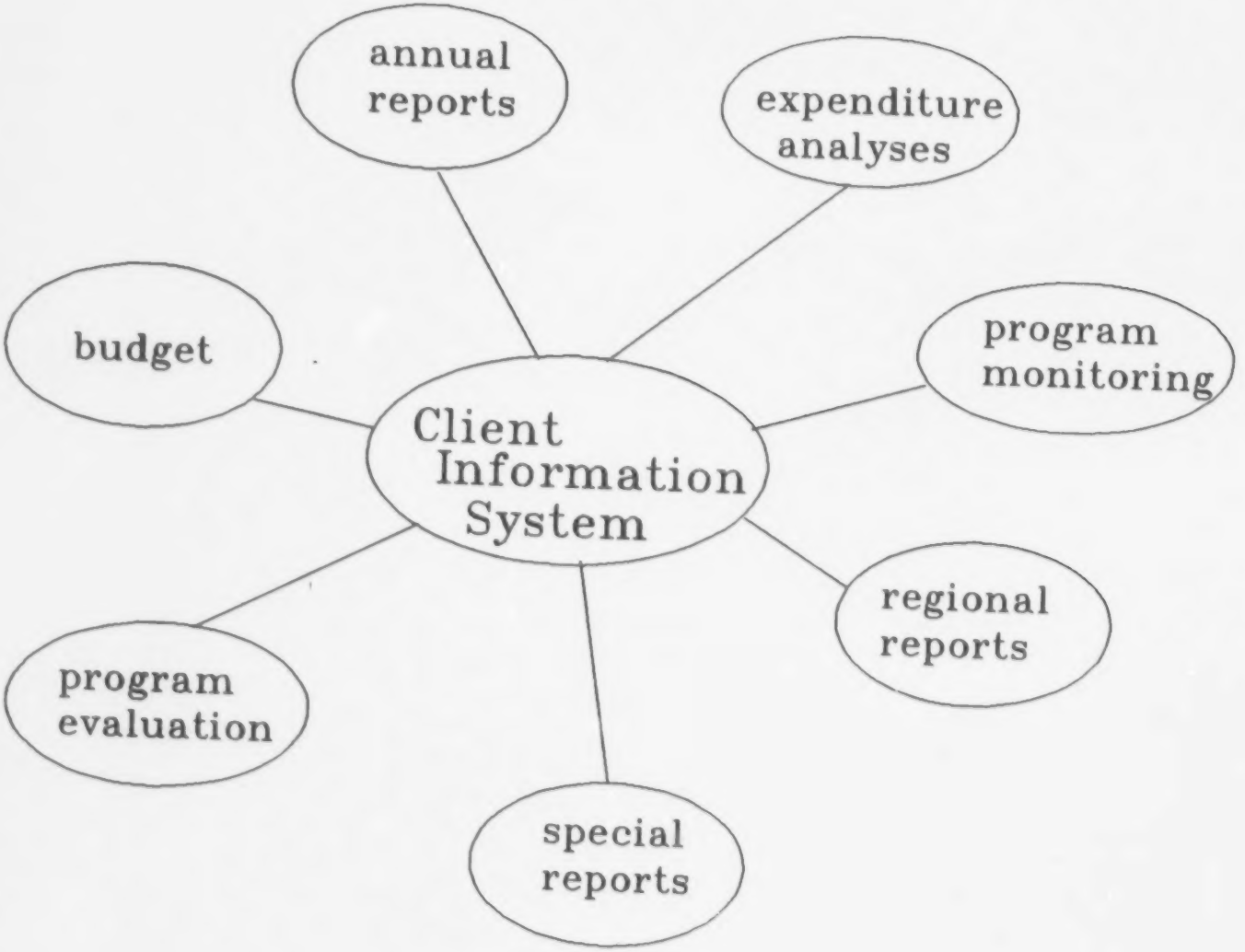
OVERHEAD 10

HOW MANAGEMENT USES INFORMATION

* CANNOT MANAGE WHAT CANNOT BE MEASURED

* INFORMATION IS REQUIRED TO SUPPORT RATHER THAN REPLACE MANAGERIAL JUDGEMENT

* AIMED AT IMPROVING ORGANIZATIONAL EFFECTIVENESS RATHER THAN IMPROVING THE EFFICIENCY OF OPERATIONAL SYSTEMS


annual reports
expenditure analyses
budget
program monitoring
Client Information System
regional reports
program evaluation
special reports

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

EXECUTIVE MANAGEMENT SYSTEMS

Yvon Beliveau
District Engineer
Transportation

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN

NOVEMBER 2-3, 1988

EXECUTIVE MANAGEMENT SYSTEMS

TEXT NOT AVAILABLE AT TIME OF PUBLICATION

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

THE FINANCIAL INFORMATION SYSTEM MICRO CONNECTION

Vishnu Chotai, Office of the Comptroller
Dick Slipp, I. S. D., Supply and Services

INFORMATION TECHNOLOGY CONFERENCE

Nov 2-3, 1988

FINANCIAL INFORMATION SYSTEM (FIS)

Speaking Notes for Vishnu Chotai

THE MAINFRAME APPLICATION

The Financial Information System (FIS) was implemented in April 1980 as the corporate accounting system of the Province. This system application resides on a UNYSIS 1100/92 mainframe computer at Marysville Place, Fredericton.

One year later, in April 1981, JFIS was implemented by the Department of Transportation (DOT). This addition allows the department to input transactions to the FIS via Unysis terminals for overnight mainframe processing. It also provides DOT with enquiry into status data by activity coding on a daily basis. There are 14 sites in operation across the Province.

The prime objectives of the FIS are to:

1. Maintain accounting for the consolidated fund of the Province. Data from the system is used by Office of the Comptroller in the preparation of the annual Public Accounts, AND

2. Provide financial reports to all levels of various departments to meet their management needs.

The FIS (including the Online Module) is under corporate ownership of the Office of the Comptroller, who ensures that the system performs at acceptable level of efficiency, and plans enhancements as required.

Full system support is provided by the Information Systems Division of the Department of Supply and Services in all areas of production, maintenance and enhancements. We, in the Office of the Comptroller, are very satisfied with the services provided by the ISD.

THE MICROCOMPUTER APPLICATION

REASONS FOR THE ONLINE FIS DEVELOPMENT

The micro to mainframe link was developed for a number of reasons:

- A number of departmental requests were received by Information Systems Division (ISD) to develop independent micro-based 'Expenditure Tracking Systems' to augment FIS reporting.

  In order to avoid multiple development costs, and individual data entry, Online FIS was considered as the logical answer. The direct link to FIS data assures economical data transfer and data integrity.

- Flexible reporting to meet managements' requirements unique to each department. This was the single most important factor.

- To faciliate timely input of data to FIS. This is more evident for input originating from local/regional offices.

- To eliminate, where possible, the need for manual record keeping by departments to augment the FIS reporting twice a month.

- The cooperation and willingness of Department of Advanced Education and Training to be the first user of this development. The system design was based on the department's requirements as applicable to all departments generally.

FEATURES OF ONLINE FIS

1. **Online Data Entry** of input documents for overnight processing within the mainframe FIS.

   Real time editing against mainframe database index files to eliminate coding errors.

   Provides faster input from departmental sites, and reduces delays especially for sites outside the Fredericton area.

   Departments decide on the number of sites and the type of input allowed at each side.

   Sign on security for authorized input.

   Central data entry via Central Accounting will be maintained.

2. **Data Transfers** from mainframe to microcomputer at Online FIS sites, for expenditures and revenues.

   Detail Data for each site is transferred via the communications network on a daily basis, for accumulation on 'a fiscal year to date' basis.

   Status Data for the whole department is provided to departmental head office by media transfer on Bernoulli cartridge twice a month (15th and month end).

3. **Local Reporting** capability at each site.

   Easy to use menu driven software.

   Site reporting uses locally stored data which is current as of the previous day.

   Head Office site has additional ability to report or review the status data of all sites.

LOCAL REPORTING AT AN ONLINE SITE

The single most important feature of Online FIS is the flexible reporting capability to meet the specific requirements at each site or branch of the department. The reporting system's flexibility surpasses that of the mainframe FIS.

Consider the following advantages:

- Data reported is as current as of the previous day.

- Choose reporting frequency to meet your needs.
  PRINT only when you need and what you need.

  Eliminate hard copy paper reports from mainframe FIS to save handling, mailing, filing, and storage costs.

  Because your data, coding descriptions and reporting software are on the same cartridge, reports can be produced at anytime, even after two years. With mainframe reports, reprinting even the last set of reports is expensive.

- View reports on screen or paper.

- Select your page breaks.

- Enquire for any specific coding for any time period (eg April 1 to date)

  - Vendor
  - Document
  - FIS code, eg for subaccount, activity, task, etc.

  Use the enquiry to answer questions any time during the year or after year end on the contents in the Public Accounts.

  This feature is not available on mainframe FIS.

- Report status or detail lines.

- Report dates

  Enter 'from' and 'to' dates.

- Structure your own reports

  Mainframe gives only 56 sequenced reports. With Online FIS you can sequence your report to meet your specific requirements.

THE FEATURES OF ONLINE FIS

Transport data files to other applications as desired, e.g.:

Lotus 1 2 3
dBase
IDEA
Word Perfect

Special Functions for:

Initial Installation
Restore from site backup
Replacement Data

STATUS OF ONLINE FIS

Since the original development, Online FIS has been enhanced for improved operating efficiency. This is a continuous review process and the Office of the Comptroller is committed to upgrading the system to meet the changing requirements subject to availability of resources.

April 1987	1.1 Version	Advanced Education and Training installed 10 Sites around the Province
August 1987		Department of Education installed 1 site
September 1987	1.2 Vers.	New version installed to improve reporting speed at Online FIS site
		Supply and Services installed 3 sites
March 1988	1.3 Vers.	Enhanced version installed: - reporting speed further improved - extensive reporting enhancements - Dual year processing - ICC upgrade - enhanced MENU system

Departments of Justice and Commerce and Technology are being installed, with one site each in operation by the end of this month.

ENQUIRIES AND INSTALLATION OF NEW SITES

Departments wishing to obtain more information should contact the Office of the Comptroller for assistance in the following areas:

- To review requirements and impact on the department
- Cost estimates
- Training
- Ongoing system maintenance.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

INFORMATION PROCESSING
A MANAGER'S UTILIZATION

Charles-Edouard Landry
Executive Director
Regional Development Corporation

PRESENTATION

ON

APPLIED QUICK INFORMATION SYSTEM

DELIVERED

TO

N.B. GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE

NOVEMBER 3, 1988

BY

CHARLES-EDOUARD LANDRY

Presentation

Bonjour Mesdames et Messieurs

Good morning ladies and gentlemen

Permettez-moi tout d'abord d'exprimer mes sincères remerciements au Comité organisateur pour m'avoir invité à venir partager avec vous une expérience vécue dans le domaine de la gestion à l'aide de l'informatique. Comme par le passé, le Comité organisateur offrira dans le rapport final une copie de cette présentation mais pour le présent exercice vous me permetterez d'adresser cette présentation en anglais.

First let me introduce myself; my name is Charles-Edouard Landry. I am presently an Executive Director with the Regional Development Corporation responsible for the management of its Northeast New Brunswick office located in Bathurst. One of our main responsabilities is the management of the Northeast New-Brunswick federal/provincial agreement on economic development.

Assisting me today is Andrew White, Information System Officer with the Department of Labor's Information Planning and Processing Branch.

INTRODUCTION

Last April, the Corporation's General Manager informed me that I had been seconded to the Department of Labour as manager of a temporary Employment Adjustment Center in Shippagan.

Although I was familiar with the Department of Labour's responsabilities and the then recently signed $4 M federal-provincial agreement concerning the implementation of special efforts for fishing industry workers, I knew little of what had been done in preparation for the opening of this Center.

On May 2nd, I met senior officials in Fredericton to discuss the opening of the above-mentioned Center. I was then informed that Departmental staff had been working on the elaboration of programs in anticipation of the opening of such a Center. My responsabilities were to set up this Center from scratch so that it be in full operation by Monday morning, May 9th.

BACKGROUND

Now, let me add a few more words on the situation we were faced with:

1 - We were faced with a situation that many described as a crisis.

2 - The office to be opened was located in Shippagan, right in the center of the fishing industry which meant front line operation.

3 - The labour force and the unions were already complaining of the lack of employment opportunity. Workers, unemployed persons, employers and potential promoters were simultaneously informed of the federal/provincial efforts through a press release informing everybody of the opening of this Center which would be responsible to administer the newly signed Federal-Provincial agreement.

4 - One week before opening, we had no staff selected so it meant quick hiring and no time for indepth training.

5 - We were informed that the Department's Information Planning and Processing Branch would look after the installation of computer capabilities for the Center.

6 - Finally, I had to worry about office space, desks, chairs, telephones, typewriter, photocopying machine, facsimile machine, pencils, papers, etc.

To me it looked very simple. Due to the urgency of this crisis situation and the limited time given to organize the opening of this Center there was only one thing to do; use my experience and take it one step at a time.

OBJECTIVE OF THE EMPLOYMENT ADJUSTMENT CENTER

The objective of the Center was to receive and register any fishing industry worker looking for employment. At the same time, we were expected to receive potential promoters and coordinate the registration, evaluation, approval or refusal and implementation of their projects which could fit under the newly announced Provincial Tandem 2000 and/or CEIC job development programs.

DEVELOPMENT

Now, let's try to concentrate on the reason why I am here today. It is to explain the utilization of computer technology in the handling of our needs.

I knew that we would be required to handle a large volume of information and it was anticipated that the operation of the Center was to last about four months. Therefore, we needed software and equipment which would permit quick processing of data in order to have adequate response time.

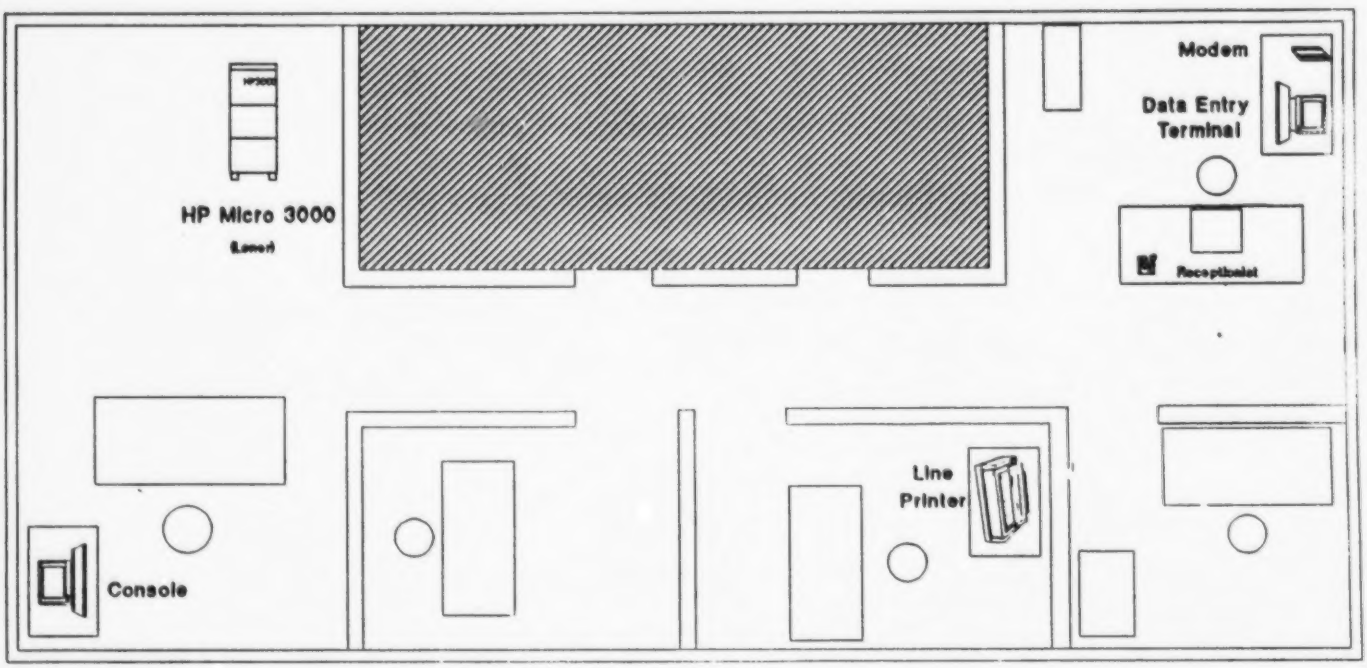
A lot of work was performed by the Department of Labour's Head Office staff and I am very grateful to them in this respect.

For the assistance associated with the computer related matters four individuals played an important role. They were Barb Craig, Jim Stoddard, Porteus Vibert and Andrew White.

Andrew was asked to put together programs for the Center's data registry operation. With only two days at his disposal, he managed to set up the necessary programs. The package used was Powerhouse, a 4th generation language .

Because of the particular crisis situation, the need to secure the data collected and the need to develop an access level system based on passwords, head office developed a security system. Many reasons prompted this action, most important data protection against tampering.

From a hardware point of view Porteus Vibert made the necessary arrangements to put the equipment together and prepared it for shipment.


Modem
Data Entry
Terminal
HP Micro 3000
Receptionist
Line
Printer
Console

On Saturday prior to the opening, Jim Stoddard installed the equipment shown here.

It is important to note that those who had been asked to put together the software and hardware had no clue on the physical arrangements of the office. They simply guided themselves on the basic condition that we planned on having 4 to 6 staff members.

So as you would expect, in light of this situation, Jim showed up in Shippagan with a lot of cables and tools.

OFFICE ENVIRONMENT

A few words on office environment for your guidance. Our premises included a very small reception area, three small side offices and one larger office. The larger office contained the filing cabinets, a storage area and the CPU.

The selected equipment consisted mostly of Hewlett Packard products. It included a Central Processing Unit (HP Micro 3000), a control terminal (an old HP 2382A), one data entry terminal (a good HP 150b), a dot matrix printer (an HP 2631b) and a 1200 baud Packard Bell hayes compatible modem.

The CPU was loaned from Hewlett Packard until the Department of Labour could free a unit capable of performing the required tasks at the Center.

It was located in the larger office and now I know how much heat it can generate. The console was located with the CPU.

The Hayes compatible modem which was installed allowed for a direct link between the Center and head office. It served for uploading and downloading data and more importantly for the online management and maintenance of the system.

STAFF

When I met the senior officials in Fredericton, I was informed that recruitment had been initiated for two officers who were later hired prior to the opening.

Due to the urgency of this crisis situation and the fact that I would feel more comfortable with support staff I knew, I opted to bring my two secretaries from my Bathurst office for a few days. This gave me the opportunity to better evaluate the situation. I subsequently proceeded with the recruitment through the local CEIC.

OPERATION

On Monday May 9th reality came to the office. Hundreds of clients showed up expecting an immediate job and many more called for similar inquiries. Altogether, we experienced over 650 inquiries on that first day.

All we were able to do for the first few days was to take the name, address and telephone number of each individual with the understanding that we would get in touch with them later to complete a registration form.

I must admit, we had no time to worry about whether or not the computer equipment was working.

On Tuesday, Andrew came to give a secretary an initial training on the utilization of the equipment, training which was later past over to the other staff members. Because the program was user friendly, the training was quite simple.

WED, OCT 19, 1988, 11:57 AM

MODE: ACTION: 1

EMPLOYMENT ADJUSTMENT CENTRE

SYSTEM MENU

01 ENTRY SCREEN (ENGLISH)

02 ENTRY SCREEN (FRENCH)

03 UPDATE SCREEN (ENGLISH)

04 UPDATE SCREEN (FRENCH)

05 EMPLOYER CODE UPDATE SCREEN

06 REPORT MENU (ENGLISH)

07 ENTER/UPDATE PROJECT APPLICATIONS

The first thing given was a basic notion on how to use the system menu screen shown here. It gave access to entry or update screens.

The report menu and project capabilities shown at items 6 and 7 came later and will be touched upon later in this presentation.

REGISTRATION FORM

The registration of our clients was initially conducted manually with the idea that the information gathered on the registration form would later be inputed.

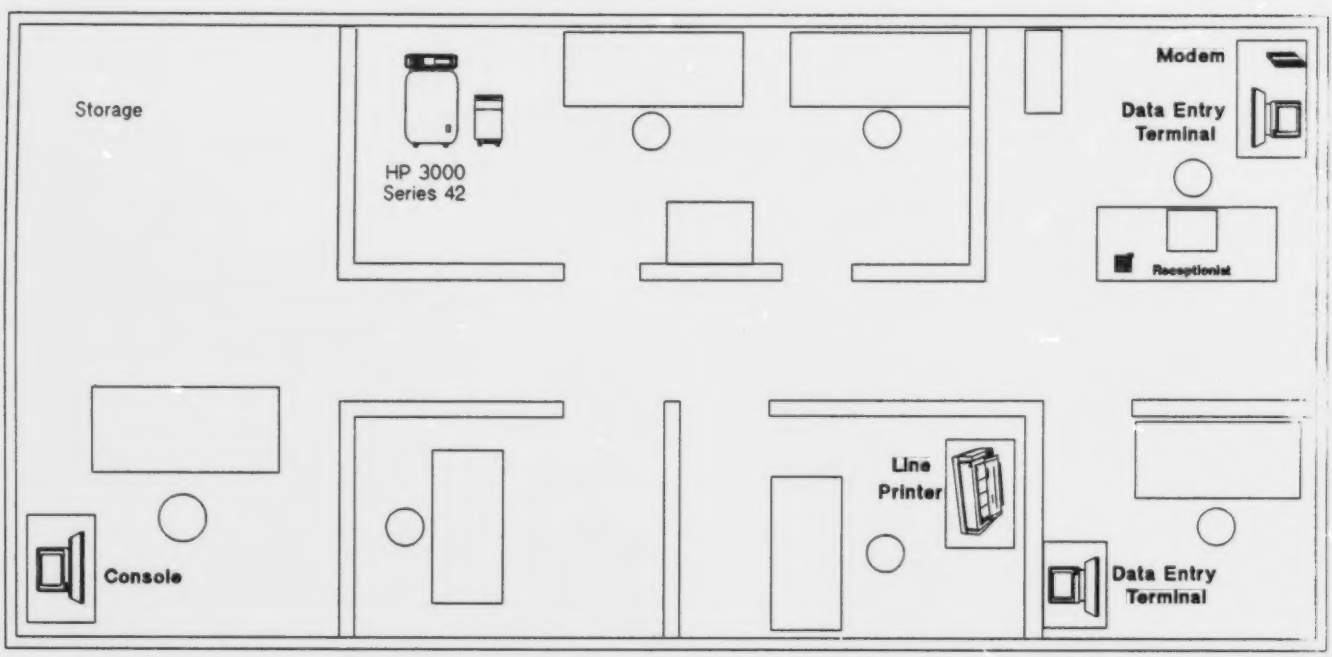
The registration form that you see here gives you an indication of the type of data collected. This included such information as: social insurance number, name, address, telephone number, education level and also information associated with their skills and experiences.

The completion, through clients interview, was the responsability of the two newly hired officers. Subsequent to the interviews the data collected was inputed by the support staff on the terminal for later utilization. We quickly realised that we had a big problem on our hands which was the large volume of information collected and still growing every day.

I immediately took steps to accelerate the recruitment of the support staff and without going into details we soon had three new secretaries.

Initially, data entry was performed by one person on the only good terminal we had. Because of the increased backlog, I asked head office for an additional terminal.

2


Storage
HP 3000
Series 42
Modem
Data Entry
Terminal
Receptionist
Line
Printer
Console
Data Entry
Terminal

NEW EQUIPMENT (PHASE 2)

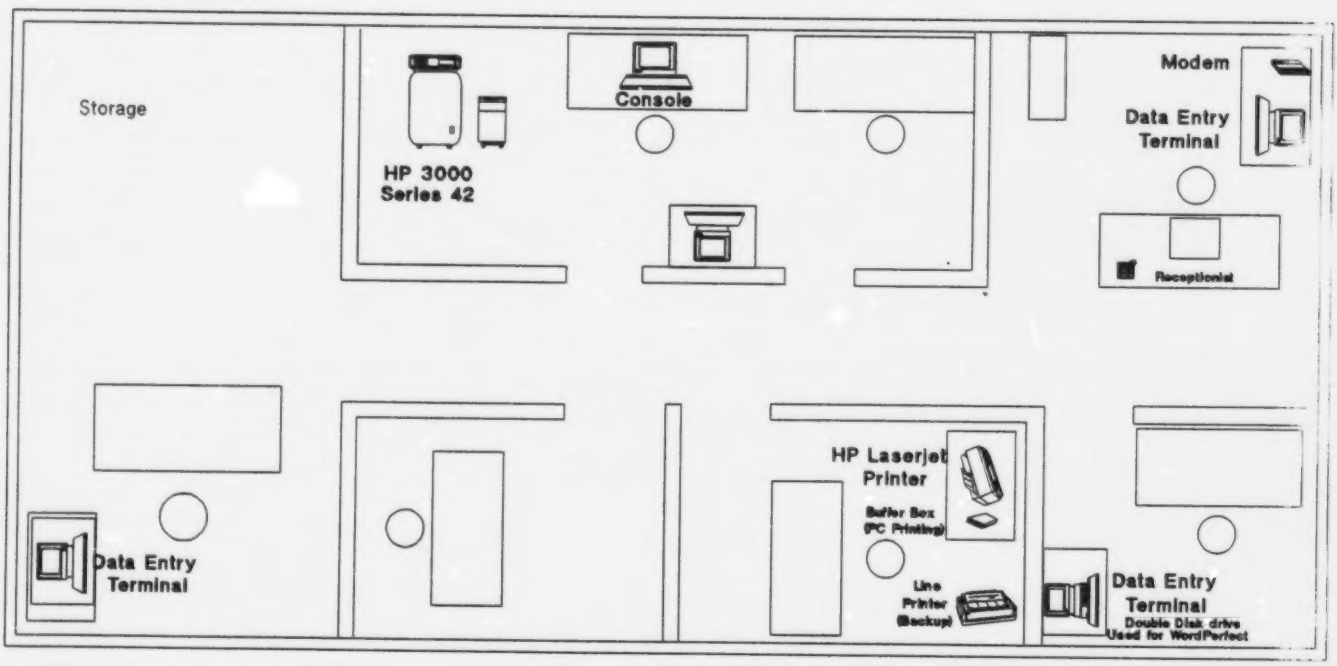
We soon found out that the loaned equipment had to be returned and when the new CPU (HP 3000 serie 40) was brought in I chose to install it in the new space we had just leased. A new terminal was also added in side office number 1 where the support staff supervisor was now located.

At this point I want to take this opportunity to comment about the loaned equipment. When the HP micro 3000 was returned to Toronto we were informed that we did not need to worry about the security of the data inputed; it had been backed-up to Fredericton, via modem, prior to removal of the loaned equipment.

It is sometime difficult for some manager to understand the meaning of this because managers do not always understand what is involved. Furthermore, when the information in question is critical to your daily operation, it is sometimes difficult to feel secure.

Managers should be honest with themselves and tell the specialist what they do not understand, thereby suggesting the specialist to modify his approach vis-a-vis the manager.

3


Storage
HP 3000
Series 42
Console
Modem
Data Entry
Terminal
Receptionist
HP Laserjet
Printer
Buffer Box
(PC Printing)
Line
Printer
(Backup)
Data Entry
Terminal
Double Disk drive
Used for WordPerfect
Data Entry
Terminal

NEW EQUIPMENT (PHASE 3)

A few weeks after the opening, an increased backlog, the large number of projects presented, the increased need for automated word processing and the noise problem caused by the dot matrix printer located in one of the side offices compelled us to obtain 2 new terminals, a laser printer and a disk drive for one of the HP 150 terminals.

At this point the project approvals by the Province and the Federal required us to start developing from our databank a list of names of eligible applicants which would be considered by the promoters in filling the approved job openings.

This increased our need for word processing capabilities. The installation of a disk drive on the HP terminal converted the capability of that terminal to a PC. It gave us the required word processing capabilities. The software used was WordPerfect.

Because of time constraint and the fact that the support staff hired had some experience with WordPerfect, I chose the terminal/PC route with WordPerfect for expediency.

The utilization of a noisy dot matrix printer and the increased volume of business necessitated the acquisition of the laser printer. It improved the quality of printing, the rapidity and most importantly sound reduction much needed.

At the same time, a buffer box was installed to permit utilization of the laser printer from all HP terminals and also from the terminal equipped with a disk drive when it was functioning in the PC mode.

The backlog of registration forms, the increased number of inquiries from clients and more importantly the large number of projects presented, made it necessary to use the equipment to overcome our need for quick management of the information.

Our involvement in a joint effort and the numerous projects on hand dictated that I develop a quick control form to gather pertinent data on all these projects and more importantly their status.

The modem was a great tool because when I ask the head office specialist to develop a program for these needs, I had my program at my disposal within a day. If you remember earlier I mentioned that I had touched on a project report capability; well, when I asked for this I would obtain the next screen which would permit me the following.

THURS, OCT 20, 1988, 3:52 PM

MODE: ACTION: L

EMPLOYMENT ADJUSTMENT CENTRE

REPORT MENU

01 LIST EMPLOYEE SKILLS BY HOME LOCATION

02 COUNT EMPLOYEES BY HOME LOCATION

03 LIST EMPLOYEES BY HOME LOCATION

04 LIST EMPLOYEES FOR SELECTED WORK LOCATIONS BY DATE

05 LIST EMPLOYEES FOR SELECTED WORK LOCATIONS

06 LIST PROJECT APPLICATIONS BY LOCATION

07 LIST PROJECT APPLICATIONS BY APPLICANT NAME

08 LIST PROJECT APPLICATIONS BY STATUS

As you can see, the report menu gave us query capabilities on clients and projects. When the number of projects received became quite important this query capability permitted us to track a lot of information on these projects.

Let's remember that we had, as a prime function, the matching of job opportunities created by these projects with the registered clients.

If we look at one example of these query capabilities regarding clients registered at the Center. For the federally funded projects, CEIC required that the Center verify, prior to presentation of referals, that these individuals had less then 6 weeks of insurable earnings during the last 30 weeks.

Another example mentioned previously is the control of the follow-up of projects. With the computer I was able to extrapolate some specific facts on any project such as; who is looking after the project, when was the client contacted, what is the current status, etc. This became very practical later in the summer when the number of projects increased substantially.

These examples are just two of many which the Center performed and, as you can appreciate, many of these tasks could not have been performed in such a short time without the computer.

On the other hand our data entry update capability permitted us to update daily our Shippagan data bank. The transfer of this information to head office which occured through the modem every night permitted the Fredericton staff to be kept up-to-date on all these activities on a daily basis.

During the summer we experienced many needs to improve on our search capabilities and, as I mentioned before, all the requirements we put up were quickly answered by the specialists, which in return made our job most interesting.

In conclusion, this experience was one of team work. I hope that this presentation shows you that when the organization believes in the technology and that the staff has the knowledge of what can be achieved, all of this can be put together to improve the productivity. Let's not forget that all of this happened in 4 months.

I wish again to thank the organizers for having given me the opportunity to share this challenging experience and, if time permits, I would be ready to answer any of your questions.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

COMPUTERIZATION IS A POWERFUL TOOL

Sherry Palmer
Controller
Trent Industrial Contractors Ltd.

COMPUTERIZATION - A POWERFUL MANAGEMENT TOOL

Importance of Computerizing Intelligently

Common Assumption - "Install a computer and everything will work like magic."

Unfortunately it is not that simple! Installing a computer without proper research, planning and training can, and probably will result in bitter disappointment.

Considerations Before Purchase:

* What is current manual accounting system like?
Should be well organized and effective before automation.
If it is messy now, computerization will only automate the mess.

* What are company's computer system objectives? (See Appendix A).

* Software packages available to achieve company's objectives and capable of handling future needs and costs related. Ensure reputable software company and training, customization and on line support will be provided if needed and cost of same. Obtain a list of other companies using software. Contact these companies to find out how long the software has been in use and any problems they have encountered.

* Hardware systems compatible with software and capable of meeting company's long term requirements. Warranty on hardware and costs. Training provided for operation of hardware system and cost. List of companies to contact regarding quality of service and maintenance.

* Computer Investment Financial Justification (See Appendix B).

* Current Government Financial Assistance Programs.

Following Purchase:

TRAINING IS A MUST!

Without proper training the chance of failure is much higher. The difficulty of learning how to use a computer system, especially with complex software, should not be underestimated.

Training Will:

- Build staff morale by avoiding frustration in working with an unfamiliar system.

- Greatly decrease time to implement system.

- Increase use of system's full potential.

- Overall transition will be smoother.

ROLE IN OPERATIONAL AND STRATEGIC PLANNING

In order to survive in the long-run it is necessary to survive in the short run. Thus, the need for operational planning.

Adequate information is needed to prepare a realistic operational plan. Computerization speeds access to this information. Software packages such as Lotus 1-2-3 enable manipulation of this information to quickly and accurately prepare cash flow projections and financial forecasts.

Strategic Planning involves thinking about major issues over a period of 5 to 10 years. Lotus 1-2-3 lends itself to "What If" analysis which is very beneficial to long-range planning.

Basic to strategic planning is the ability to recognize the strengths and weaknesses of the business. An efficient computerized accounting information system reveals these strengths and weaknesses.

BENEFITS TO BE REALIZED FROM COMPUTERIZATION

INCREASE PERFORMANCE AND PROFITABILITY AND MAINTAIN BETTER CONTROL

*Reduce Clerical Workload:

* Significantly reduce the clerical workload in the office.

*Delay Hiring Staff:

* Hold the line on hiring more office staff.

*Divisional Reporting:

* Produce monthly financial statements showing divisional operating results to help monitor profitability by area of activity on a regular basis.

*Improve Month-End Operations:

* Eliminate the accounting paperwork backlog to realize timely month end and close-offs and create more even and meaningful financial statements.

*Job Costing:

*Produce job costing reports more quickly and make the information more readily available to key people in the company to achieve the following:

(a) Provide better historical job cost figures to estimators upon which to base future estimates. Land even more new jobs through more accurate estimates.

(b) Analyze and compare historical jobs on a regular basis to determine what types of jobs are most profitable and take action to expand the business in these areas.

(c) Achieve tighter cost control over current jobs (especially longer contracts) to identify problems earlier and take steps to protect profit margins sooner.

*Single "Source Entry":

* Labour hours will be fed into the computer only once for job costing and payroll purposes, making it easier to measure lost/idle time on service work. This also streamlines the office paperwork.

*Maintain Cost Experience "On-Line":

* Maintain a history of past bids won and lost to assist in future bidding. Also, use historical job cost information to help avoid needless losses on work which experience shows resulted in cost overruns.

*Computer Estimating:

*Improve Cashflow:

* Expedite the invoicing process and improve cashflow.

*Supplier Discounts:

* Take advantage of more supplier discounts.

*Information for Management:

* Introduce top notch information systems to facilitate the management of the business and help ensure its continuing success, with a lessening active involvement on the part of senior management. This should enable senior management to keep in close touch with the business without necessarily being on-site on a day to day basis.

*Maximize Progress Billings:

* Use the computerized purchase order system to help identify, track and expedite equipment deliveries to arrive before the 20th to maximize monthly progress billings.

*Purchase Order Controls:

* Streamline the ordering of materials and follow-up on delivery status.

*Vehicle Costing:

* Track operating costs by vehicle and monitor more closely.

APPENDIX "A"

TRENT'S COMPUTER SYSTEMS OBJECTIVES

1. Install a multi-user computer with accounting software to meet the company's long term (5-10 year) information systems requirements.

2. Implement the following business computer applications.

   - General Ledger & Financial Reporting
   - Accounts Payable
   - Payroll
   - Job Costing (including historical job profitability analysis)
   - Purchase Orders
   - Invoicing
   - Accounts Receivable
   - Inventory Control

3. Streamline the accounting system through computerization to reduce the clerical workload.

4. Dedicate IBM-AT to estimating and design activities to allow the estimators to bid more jobs.

5. Produce job costing reports more quickly and make the information more readily available to key people in the company to achieve the following:

   (a) Provide better historical job cost figures to estimators upon which to base future estimates. Land even more new jobs through more accurate estimates.

   (b) Analyze and compare historical jobs on a regular basis to determine what types of jobs are most profitable and take action to expand the business in these areas.

   (c) Achieve tighter cost control over current jobs (especially longer contracts) to identify problems earlier and stake steps to protect profit margins sooner.

6. Use the computerized purchase order system to help identify, track and expedite equipment deliveries to arrive before the 20th to maximize monthly progress billings.

7. Accelerate billing process and reduce manual effort.

8. Eliminate the accounting paperwork backlog to realize timely month end closeoffs and create more even and meaningful financial statements.

9. Computerize inventory records to free staff for other more valuable work, give better control over inventory investment and produce better information for management.

10. Introduce top notch information systems to facilitate the management of the business and help ensure its continuing success.

11. Select a computer that is expandable to meet the future growth requirements of the company information systems; eg: word processing, additional workstations and printers, more data storage capacity, etc., to ensure it will be a good long term systems solution.

APPENDIX "B"

COMPUTER INVESTMENT FINANCIAL JUSTIFICATION

A. EXISTING SYSTEM CONSIDERATIONS:

1. Cost Reduction/Displacement:

   * Service Bureau
   * Machine Maintenance
   * Clerical Time

2. Cost Avoidance:

   * Future Staff Hiring

   * Machine Upgrade/Replacement

B. COMPUTER APPLICATIONS BENEFITS:

1. Job Costing:

   * Control volatile costs on active jobs (especially labour)
   * Improve accuracy of future estimates to obtain more jobs
   * Compare historical profits by job type to direct business into more profitable areas

2. Equipment Costing:

   * Better replacement/repair decisions
   * Identify and act on unusual cost experiences
   * Analyze historical parts expenditures by machine to control/reduce future costs

3. General Ledger & Financial Reporting:

   * Reduce audit fees
   * Increase confidence of financial institutions

4. Accounts Payable:

   * Take advantage of supplier discounts
   * Monitor any progress "over-billing" by sub-contractors

5. Payroll:

   * Reduced clerical time
   * Accurate time/cost allocation to jobs (and equipment)

6. Purchase Orders:

   * Avoid excessive prices by referring to "last cost"
   * Expedite materials to job sites to maximize progress billings
   * Post immediately to Job Costing

7. Inventory Control:

* Improve availability/service level
* Reduce expediting costs
* Reduce overstock situations
* Automatic valuation for financial statements
* Use purchasing power to obtain volume discounts from suppliers

8. Estimating:

* Bid on more jobs
* Reduce clerical errors

9. Electronic Spreadsheet:

* Budget preparation
* Cashflow planning
* Financial evaluation on large project bids

10. Accounts Receivable:

* Interest charges (if appropriate)
* Improve collections/reduce carrying charges

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

VITAL ASPECTS OF INFORMATION PLANNING

KEYNOTE SPEAKER

Bob McCulloch
Director, Executive Programs
D M R Group

INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

VITAL ASPECTS OF INFORMATION PLANNING

Robert E. McCulloch
D M R Group

Information planning has evolved dramatically over the last two to three years as the line executive gets more involved in the leadership of the activity, and the results become more relevant to the *business* of the organization.

Keynote speaker Robert E. McCulloch, CMC, in his address at our Conference, discussed the changes in the planning process, and highlighted the elements that are critical to its success. In his remarks, he addressed the role of the line executive in the planning activity, and the crucial area of determining and measuring value of the technological investment.

The following pages are point-note form of the contents of his speech.

BACKGROUND

Bob McCulloch has a Bachelor of Science degree from the University of Toronto and a Master of Business Administration from the University of Western Ontario. He is a member of the Institute of Management Consultants of Ontario, the Canadian Information Processing Society, The Planning Forum, and the American Management Association.

Bob joined DMR in 1980, and established *The Institute* for the organization. He has addressed over 200 management audiences and has moderated over 100 senior and middle management group planning meetings. He is a Director of DMR, with responsibility on an international basis for the development and delivery of executive and professional education in information management, and strategic planning assignments for clients of DMR.

Vital Aspects of Information Planning for the 1990s

Bob McCulloch, CMC
DMR Group Inc.

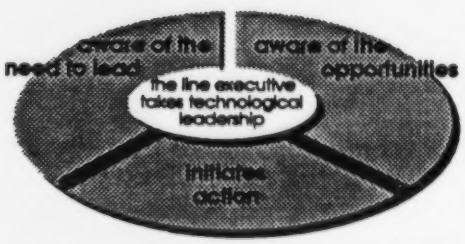
Major Shifts

- internal view versus external view
- concern over IT's track record
- dispersion of the function
- the increasing power of the chip
- "the network is the system"

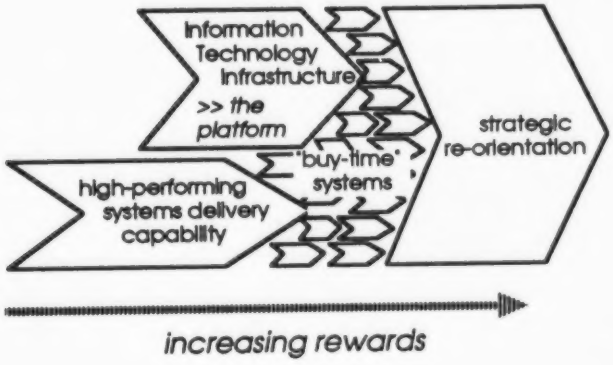
Elements of the need

- line executive leadership
- rethinking the business
- building computer fluency
- focussing IT strategically
- facilitator role
- managing the benefits

Line Executive Leadership


aware of the need to lead
aware of the opportunities
the line executive takes technological leadership
initiates action

Strategic Opportunity Are



Strategy versus Architecture

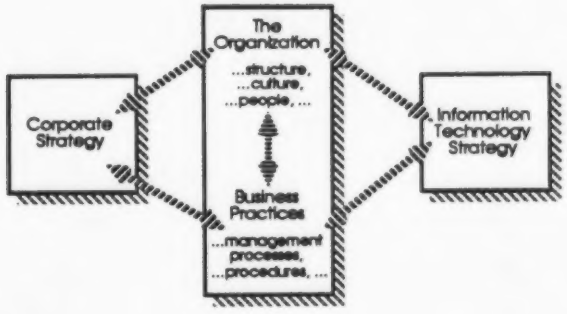
Strategy

- stability & longevity
  >> values, principles, policies
- manifesto for change

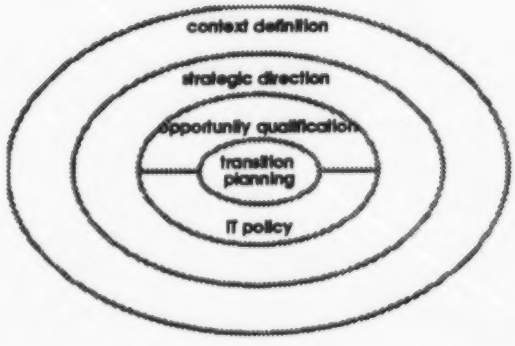
Architecture

- organized view of the future

A Strategy Framework



Strategy Development Phases



Strategy Development Results

Context Definition

- clear understanding of the business environment (external and internal)
- strategic drivers/key indicators
- assessment of organization's capacity to change
- assessment of current IT environment

Strategy Development Results

Strategic Direction

- changes required by strategic drivers (changes to the organization and business practices)
- areas where IT can provide enabling support to transformational change
- key business drivers for IT

Strategy Development Results

Opportunity Qualification

- specific, immediate opportunities to advance the organization's strategic objectives

A Case Study

- large bank
- corporate banking focus
- increased competition (trustcos, AmEx, GM, GE, ...)
- pricing being squeezed

  >> task force to refocus the activity

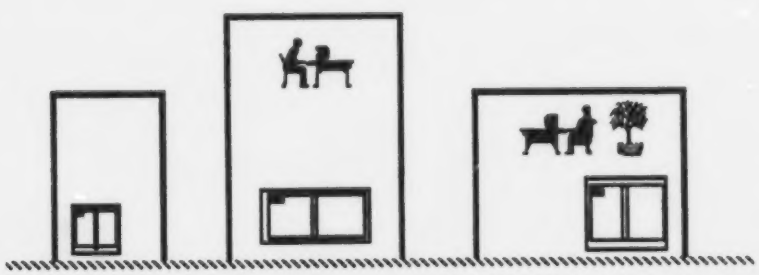
The Task Force results

- focus on the customer relationship
- reorganize to support the relationship
- offload account manager of administration
- shift the measurement/feedback system

  >> *investigate opportunites for the use of technology*

...solution looking for a problem?

The Opportunities



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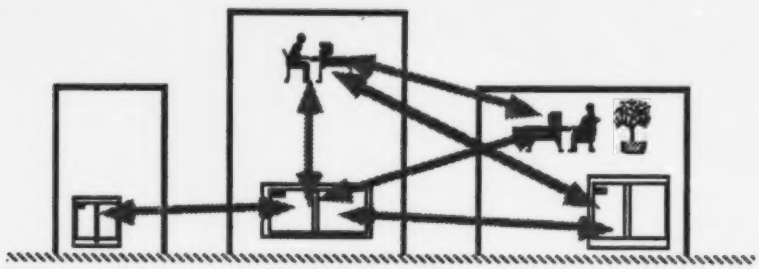

Strategy Development Results

IT Policy and Principles

- a vision for IT including:
  - IT organization
  - policies for managing IT throughout the organization
  - policies for the IT infrastructure
    >> technology platform
    >> applications management
    >> data resource management
    >> development environment

Strategy Development Results

Transition Planning

- migration plan for implementation of the changes called for in the vision for the transformed organization
- project plans for qualified opportunities
- executive approval to proceed

Closing Messages

GET INVOLVED...

- focus on the important
- resolve the urgent
- increase the productivity of the providers
- stabilize the infrastructure
- prepare the users

The 5 Questions

(1) Do we have a sound business strategy for IT?

(2) What value are we receiving from our investment in IT?

(3) Does the current status of IT in our organization, or our management of it, prevent us from doing anything we expressly want to do?

(4) Who provides the visionary leadership for the exploitation of technology in our organization?

(5) What plans are in place as contingency to, or recovery from disaster?

Vital Aspects of Information Planning for the 1990s

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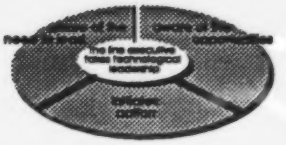

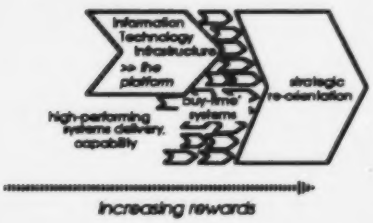

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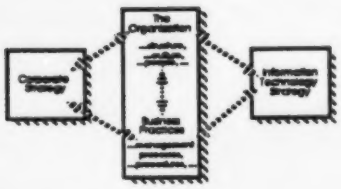

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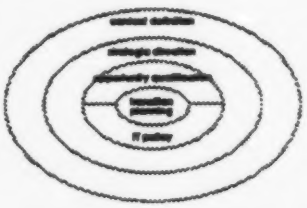

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INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

CLOSING COMMENTARY

Max C. Lewis
Deputy Minister
Supply and Services

INFORMATION TECHNOLOGY CONFERENCE

CLOSING COMMENTS

MAX C. LEWIS
Deputy Minister, Supply and Services

I hope, by virtue of what you have seen and heard in the past two days, and by virtue of your experiences with the Department of Supply and Services, that you can recognize our interest in being a thouroughly professional and well equipped SERVICE agency.

We are continually expanding efforts to introduce improvements in both our facilities and our processes, and our staff is indeed dedicated toward positive and progressive services.

We are interested in working cooperatively within the government community. We are interested in feedback from the community regarding our services, and we will be continuing to support these conference sessions.

Over the past two days, you have heard or have seen a variety of viewpoints about information systems technology efforts within the New Brunswick government environment. Perhaps there are two predominant messages throughout the theme of this Conference:

> FIRST - The senior executive group in government is interested in this field of activity; moreover, this group is becoming more involved and committed to the effective use of our human resources and facilities;
>
> SECOND - The cooperative use of resources, both people and equipment, is predominant in the ingredient list of every successful system venture.

Perhaps you will have noticed that there is a shifting emphasis of focus on <u>what</u> is being done in systems, and <u>why</u>, the reasons and benifits, and a decreasing focus on the <u>how</u>. This is not to suggest that the how is not important at all, but rather to suggest that there must be increased emphasis on effective use of technology for business reasons.

Needless to say, this emphasis on effective and cost benificial use of technology for information systems will continue, and is shared by the political as well as the administrative levels of governemnt.

Computer technology must be acquired with three factors in mind:

1. There must be a demonstratable benifit.
2. We must ensure that we can maximize our current investment.
3. We must ensure our investments allow data sharing as well as resources sharing, and are consistent with corporate strategy.

Thanks to everyone who has attended and participated, and we hope to see you at our next conference.

INFORMATION TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

APPENDICES

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE

To all participants:

On behalf of the Information Systems Division of Supply and Services, and the planning commitee, I am pleased to welcome you to the sixth Information Technology Conference of the Government of New Brunswick.

For some years now, Supply and Services has sponsored and coordinated this conference to promote the dissemination of information systems technology across all departments and to create an opportunity to exchange ideas within the Government.

The central theme of this Conference is *Information in Strategic Management*. The presentations will focus on the crucial role, uses and value of information as a Corporate and Departmental resource in short and long term management of government business.

Thank you for your support and participation.

Lori MacMullen,
Chairperson,
Planning Committee

CONFÉRENCE SUR LA TECHNOLOGIE INFORMATIQUE DU GOUVERNEMENT DU NOUVEAU-BRUNSWICK

Aux participant(e)s :

Au nom de la Division systèmes informatiques du ministère de l'Approvisionnement et des Services, et du comité organisateur, je vous souhaite la bienvenue à la sixième Conférence sur l'information technologique du gouvernement du Nouveau-Brunswick.

Depuis quelques années déjà, le ministère parraine et coordonne cette conférence dans le but de promouvoir la propagation de connaissances en technologie informatique et de créer une ambiance propice à l'échange d'idées au sein du gouvernement.

Cette conférence porte sur *L' Information comme outil de gestion.* Les présentations accentueront le rôle vital, la valeur, et les usages de l'information en tant qu'outil de gestion gouvernementale et ministérielle, à court et à long terme.

Merci de votre support et de votre participation.

Lori MacMullen
Présidente
Comité organisateur

NEW BRUNSWICK GOVERNMENT
INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

AGENDA

Wednesday, November 2, 1988

08:00	REGISTRATION
08:30	WELCOME TO THE CONFERENCE Jerrie Fowler, Assistant Deputy Minister Information Systems, Supply & Services
08:35	INTRODUCTION TO THE CONFERENCE Lori MacMullen, Conference Chairperson
08:40	INFORMATION TECHNOLOGY STRATEGIC DIRECTION AND POLICY FRAMEWORK Gerald F. Henry, CIRO, Board of Management
09:15	EXECUTIVE COMMENTARY E. L. MacKinnon, Secretary of Board of Management Max C. Lewis, Deputy Minister, Supply and Services R. Saintonge, Deputy Minister, Agriculture Mavis Hurley, Deputy Minister, Income Assistance John Roushorne, Deputy Minister, Labour
10:45	COFFEE BREAK
11:00	DEMYSTIFYING G. I. S. Janice LeBlanc, Assistant Commissioner, Office of Economic Development
11:30	STRATEGIC INFORMATION PLANNING Richard Dunphy, I. S. D.
12:15	LUNCH
13:15	METHODOLOGIES PROJECT REPORT Keith Murray, Client Services, I. S. D.
13:45	I. S. D. ACTIVITIES REPORT Bob Ellis, Acting Executive Director
14:30	COFFEE BREAK
14:45	MARYSVILLE DATA CENTER : SERVICES AND FACILITIES Danny MacCallum, Director, and Data Center personnel
16:00	OPEN DEMOS - Royal Stewart Hall

CONFÉRENCE SUR LA TECHNOLOGIE
INFORMATIQUE DU GOUVERNEMENT
DU NOUVEAU-BRUNSWICK

les 2-3 novembre, 1988

ORDRE DU JOUR

le mercredi 2 novembre, 1988

08:00	INSCRIPTION
08:30	BIENVENUE A LA CONFÉRENCE Jerrie Fowler, Sous-ministre adjoint Systèmes informatiques, Approvisionnement et Services
08:35	INTRODUCTION A LA CONFÉRENCE Lori MacMullen, Présidente de la conférence
08:40	CONCEPTION DES POLITIQUES ET DIRECTION DE LA STATÉGIE TECHNOLOGIQUE Gerald F. Henry, ACRI, Conseil de gestion
09:15	COMMENTAIRES EXÉCUTIFS E. L. MacKinnon, Secrétaire du Conseil de gestion Max C. Lewis, Sous-ministre, Approvisionnement et Services R. Saintonge, Sous-ministre, Agriculture Mavis Hurley, Sous-ministre, Aide au revenu John Roushorne, Sous-ministre, Travail
10:45	PAUSE-CAFÉ
11:00	S. I. G. A LA PORTÉE DE TOUS Janice LeBlanc, Commissaire adjointe, Bureau du dévelopement économique
11:30	L'INFORMATION STATÉGIQUE PLANNIFIÉE Richard Dunphy, D. S. I.
12:15	DÉJEUNER
13:15	RAPPORT D'ÉTUDE SUR LES MÉTHODOLOGIES Keith Murray, Services aux Clients, D. S. I.
13:45	RAPPORT D'ACTIVITÉS DE LA D. S. I. Bob Ellis, Directeur éxecutif intérimaire
14:30	PAUSE-CAFÉ
14:45	LE CENTRE D'INFORMATIQUE DE MARYSVILLE : SES SERVICES ET INSTALLATIONS Danny MacCullum, Directeur, et le personnel du centre
16:00	DÉMOS LIBRES - Salon Royal Stewart

NEW BRUNSWICK GOVERNMENT
INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

AGENDA

Thursday, November 3, 1988

08:00	**REGISTRATION**
08:30	**OPENING REMARKS** **Lori MacMullen, Conference Chairperson**
08:45	**INFORMATION SECURITY:** **RISKS AND SAFEGUARDS** **Superintendant John R. Religa** **D/dir, Protective Policing Directorate, RCMP**
09:45	**INFORMATION SERVING MANAGEMENT** **Joe E. MacIntyre, Executive Director - A. D. D. C.**
10:15	**COFFEE BREAK**
10:30	**EXECUTIVE MANAGEMENT SYSTEM** **Yvon Beliveau, District Engineer, Transportation**
11:00	**FINANCIAL INFORMATION SYSTEM** *The micro connection* **Vishnu Chotai, Office of the Comptroller** **Dick Slipp, I. S. D.**
11:30	**INFORMATION PROCESSING -** **A MANAGER'S UTILIZATION** **Charles Landry, Executive Director, R. D. C.**
12:00	**LUNCH**
13:15	**COMPUTERIZATION : A POWERFUL TOOL** *Information systems in Industry* **Sherry Palmer, Controller** **Trent Industrial Contractors Ltd,** **Saint John, N. B.**
14:15	**VITAL ASPECTS OF INFORMATION PLANNING** *KEYNOTE SPEAKER* **Bob McCulloch, DMR Group Inc.,** **Director, Executive Programs**
15:15	**CONFERENCE SUMMARY** **Max C. Lewis, Deputy Minister, S. & S.**
15:30	**COFFEE BREAK**
	OPEN DEMOS - Royal Stewart Hall

CONFÉRENCE SUR LA TECHNOLOGIE
INFORMATIQUE DU GOUVERNEMENT
DU NOUVEAU-BRUNSWICK

les 2-3 novembre, 1988

ORDRE DU JOUR

le jeudi 3 novembre, 1988

08:00	**INSCRIPTION**
08:30	**COMMENTAIRES D'OUVERTURE** **Lori MacMullen, Présidente de la conférence**
08:45	**LA SÉCURITE DE L'INFORMATION:** **PÉRILS ET SAUVEGARDES** **Surintendant John R. Religa** **Dir/a, Direction des services de protection, GRC**
09:45	**L'INFORMATION AU SERVICE DE LA DIRECTION** **Joe E. MacIntyre, Directeur éxecutif, C. A. P.**
10:15	**PAUSE-CAFÉ**
10:30	**SYSTEME DE GESTION POUR L'EXÉCUTIF** **Yvon Béliveau, Ingénieur de district, Transport**
11:00	**SYSTEME D'INFORMATION FINANCIERE** *La micro connexion* **Vishnu Chotai, Bureau du Controleur** **Dick Slipp, S. D. I.**
11:30	**L'INFORMATIQUE -** **UTILISATION PAR LES GESTIONNAIRES** **Charles Landry, Directeur exécutif, S. A. R.**
12:00	**DÉJEUNER**
13:15	**L'INFORMATIQUE: UN OUTIL PUISSANT** *Des expériences du secteur privé* **Sherry Palmer, Controleur,** **Trent Industrial Contractors Ltd,** **Saint-Jean, N.B.**
14:15	**LES ASPECTS FONDAMENTAUX DE LA PLANIFICATION DE L'INFORMATION** *CONFÉRENCIER* **Bob McCulloch, Groupe DMR Inc.** **Directeur, Programmes Exécutifs**
15:15	**SOMMAIRE DE LA CONFÉRENCE** **Max C. Lewis, Sous-ministre, A. & S.**
15:30	**PAUSE-CAFÉ**
	DÉMOS LIBRES - Salon Royal Stewart

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

HIGHLIGHTS

INFORMATION TECHNOLOGY STRATEGIC DIRECTION AND POLICY FRAMEWORK

A presentation by the Chief Information Resources Officer.

The Government approved an Information Technology Strategy in March, 1988, which sets the direction for information management over the next 5 to 10 years. The strategy covers organizational issues, data structures, multiple user needs, and technology standards.

The principles of the strategy involve addressing the information needs of all levels of the government organization through improved data management, data sharing, compatible technologies and standards. The strategy recognizes that most information needs of the several levels of government although different, can be met from the same data if it is collected, stored and managed with these several divergent needs in mind.

The presentation will give an overview of the strategy, its goals, achievement to date, and plans for the future.

EXECUTIVE COMMENTARY

Participation of several Deputy Ministers accenting the need of Information Systems in Management, their experiences and objectives in gleaning information from available data.

DEMYSTIFYING G. I. S.

Presentation from the Office of Economic Development regarding the role of utilizing Geo-based data in support of the Province's economic and social programs.

STRATEGIC INFORMATION PLANNING

An outline of the process, objectives and product of conducting an Strategic Information Plan study.

Good information is a prerequisite for good management decision-making in government as well as in business. Management today recognizes that information is a vital resource and must be managed and planned. Unplanned implementation of information technology will result in isolated pockets of data which may be inaccessible to Senior Management, and will lead to unneeded expenditures in the long run.

METHODOLOGIES PROJECT REPORT

A status report on the process involved in the selection of Project Management and Systems Development Methodologies.

DATA CENTER SERVICES

Exposé of the broad range of services available to Departments, and the new software developments in the works.

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

HIGHLIGHTS

INFORMATION SECURITY

Superintendent John R. Religa is Deputy Director of Protective Policing Directorate, Departmental Security, of the RCMP. He has accepted our invitation as speaker, and will stress the risks and safeguards in the management of Information.

INFORMATION SERVING MANAGEMENT

How Information is used by Management on a day-to-day basis at Alcohol & Drug Dependency Commission.

EXECUTIVE MANAGEMENT SYSTEM

A presentation of how information and technology will be used in the management of a district's operation in the Department of Transportation.

INFORMATION PROCESSING - A MANAGER'S UTILIZATION

The experiences of the Executive Director of the Regional Development Corporation, faced with a decision requiring information *fast*, and how he resolved the problem. Charles-Edouard Landry will attempt to make you relive the trials and tribulations of the acquisition and utilization of the technology in his workplace.

FINANCIAL INFORMATION SYSTEM

The financial information required by Management can be made available at the executive's desktop via micro-computer, and is revisable in format for management purposes.

COMPUTERIZATION: A POWERFUL TOOL

Invited speaker from private industry, Sherry Palmer, Controller of Trent Industrial, will share with us her experiences of computerization:

Importance of computerizing intelligently:
- Necessity of research, planning, and training ;

Role in operational and strategic planning:
- Increased speed, accuracy and flexibility of cash-flow, projections and financial forecasting,
- Recognition of business strengths and weaknesses ;

Benefits realized:
- Better control, increased performance and profitability.

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE

November 2-3, 1988

HIGHLIGHTS

VITAL ASPECTS OF INFORMATION PLANNING

Information planning has evolved dramatically over the last two to three years as the line executive gets more involved in the leadership of the activity, and the results become more relevant to the *business* of the organization.

KEYNOTE SPEAKER Robert E. McCulloch, CMC, has accepted an invitation to address our Conference. He will discuss these changes in the process and highlight the elements that are critical to the success of the planning process. In his remarks, he will address the role of the line executive in the activity, and the crucial area of determining and measuring value of the technological investment.

Bob McCulloch has a Bachelor of Science degree from the University of Toronto and a Master of Business Administration form the University of Western Ontario. He is a member of the Institute of Management Consultants of Ontario, the Canadian Information Processing Society, The Planning Forum, and the American Management Association.

Bob joined DMR in 1980, and established *The Institute* for the organization. He has addressed over 200 management audiences and has moderated over 100 senior and middle management group planning meetings. He is a Director of DMR, with responsibility on an international basis for the development and delivery of executive and professional education in information management, and strategic planning assignments for clients of DMR.

DEMOS *LIST ATTACHED*

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE
November 2-3, 1988

DEMOS

DATA CENTER DEMOS :

TERMINAL CONTROL DEMO

To demonstrate the daily activities and functions of Terminal Control personnel assisting clients with terminal and data communications *problems*.

OPERATIONS CONSOLE AND TERMINAL

To demonstrate the daily activities, messages and functions associated with running a large computer center.

PRODUCTION CONTROL DEMO

To demonstrate a new technique for setting up and linking *Unisys* Executive Control Language (ECL) run streams for production applications.

DIAL-UP MODEM AND TERMINAL

To demonstrate and inform clients of another service available from the Data Center, namely that of borrowing equipment for short terms.

PDS 1100, THE PERFORMANCE DISPLAY SYSTEM

To demonstrate on a personal computer PDS 1100 : a software package that displays *Unisys* mainframe resource utilization in graphics and color.

NETWORK PLANNING / UTILIZATION and CLIENT CHARGE-BACK

To demonstrate an application designed to maintain the distribution and charge-back for data network; and to create network utilization statistics.

NEW TIP TERMINAL SECURITY SYSTEM (TTSS)

To explain and answer questions on the new TIP *Transaction Terminal Security System*.

IBM JOB TRACKING SYSTEM

To demonstrate a software tool used by an application programmer to track their jobs through the IBM computer system.

VOICE AND EMERGENCY COMMUNICATIONS EQUIPMENT DEMO

To demonstrate an interactive video telephone training unit, and display stand alone emergency communication equipment.

The Technical Support **HELP** *line will be located in the demo area on the afternoon of November 2nd. Participants are welcome to drop by.*

NEW BRUNSWICK GOVERNMENT INFORMATION TECHNOLOGY CONFERENCE
November 2-3, 1988

DEMOS

OFFICE OF THE COMPTROLLER

FINANCIAL INFORMATION SYSTEM
Data downloaded to a micro platform and available to, or accessible by program managers.

EDUCATION

EXTENDED FINANCIAL INFORMATION SYSTEM
A functional extension of TFIS (above) within the department to give Directors, Managers and staff, the Budget and Expenditure data they need at their fingertips.

ADVANCED EDUCATION AND TRAINING

OPTICAL DATA CAPTURE AND PROCESSING
To demonstrate the electronic data capture and examination marking in use in the department. Expanded text available at the demo.

TRANSPORTATION

AUTOMATED FUEL DISPENSING SYSTEM
The A.F.D. System is a micro-processor based card lock system with remote access, which controls, supervises, authorizes, and records all fuel transactions.

This demo will also illustrate the use of *PROCOMM*, a micro-computer communication package used in district offices to send information updates to Head Office.

LABOUR

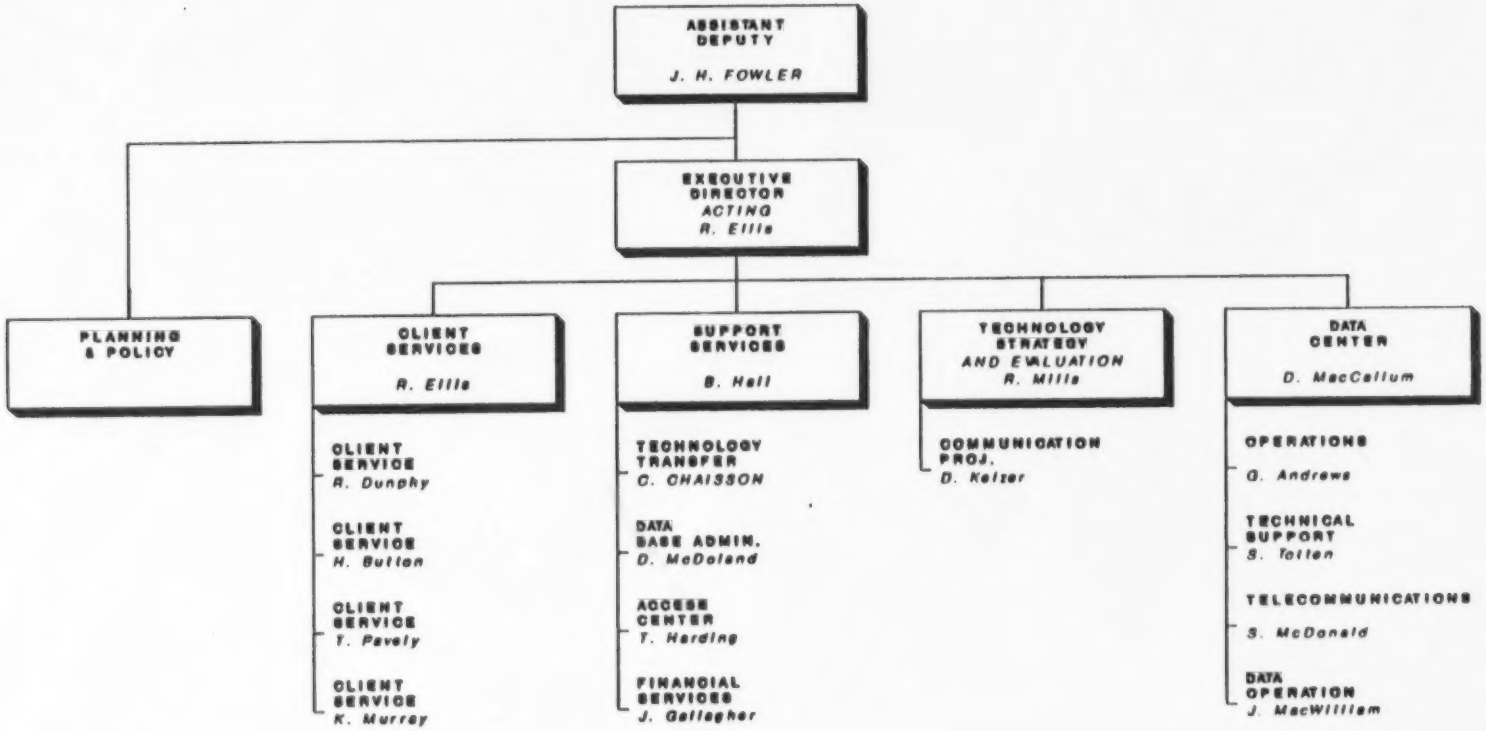
CD-ROM
The use of a PC based optical disk system for documentation tracking.

MULTIPLE CPU APPLICATIONS
Distributing applications to multiple small mini-computers, with the ability to switch systems quickly, when moving from one application to another.

MINI COMPUTER BASED PRINT SERVERS
With the aid of PC based sofware, a user is able to remain connected to the *electronic office*, and yet print to laser printers directly from within the preferred word processing package.

OTHERS
Other software, including some presented at previous conferences, available on request.

INFORMATION SYSTEMS DIVISION



INFORMATION SYSTEMS TECHNOLOGY CONFERENCE

FREDERICTON INN NOVEMBER 2-3, 1988

LIST OF CLIENT REPRESENTATIVES

PROJECT LEADER	DEPARTMENTS THEY SERVE
Donna Clark	Income Assistance
Dick Slipp	Office of the Comptroller Board of Management Executive Council General Government Legislative Assembly Office of the Auditor General Premier's Office Cabinet Secretariat
Jean Lee	Advanced Education and Training
Muhammad Hanif	Justice Education Office of the Comptroller (payrolls) Maritime Higher Education Commission N. B. Higher Education Commission
Matt Rickard	Health and Community Services Alcohol and Drug Dependency Commission
Mike Hennessey	Transportation Municipal Affairs and Environment Finance
David Cowperthwaite	Agriculture
Richard Thomas	Commerce and Technology Supply and Services Natural Resources and Energy Tourism, Recreation and Heritage Fisheries Labour Occupatonal Health and Safety Commission Regional Development Commission N. B. Housing N. B. Liquor Corporation Liquor Licensing Board Land Registration Information Service Non-government Users
Diane Nadeau	Human Resources Information System (B.of M.)
George Phillips	Special Projects

INFORMATION SYSTEM COORDINATORS
COORDINATEURS DE SYSTEMES INFORMATIQUES
NOVEMBER 1988 - NOVEMBRE 1988

DEPARTMENT MINISTERE	COORDINATOR COORDINATEUR	'PHONE
Advanced Education and Training Enseignement Supérieur et Formation	Bill Waugh	-2479
Agriculture	Richard Ward	-3694
Alcohol & Drug Dependency Commission Comm. de l'Alcoholisme et Pharmacodépendance	Ted Hudson	-2136
Board of Management Conseil de Gestion	Parker Gray	-8958
Commerce and Technology Commerce et Technologie	Gary Fraser	-2474
Education - Éducation	Gordon Scott	-2785
Executive Council Bureau du Conseil Exécutif	Rick Phillips	-2286
Finance	George Coy	-2708
Fisheries and Aquaculture Pêches et Aquaculture	Diane Nadeau-Harmon	-2251
Health and Community Services Santé et Services Communautaires	Jean-Claude Haché	-2279
Income Assistance - Aide au Revenu	Tony Ratliffe	-2882
Justice	Dianne Yates	-3693
Labour - Travail	Stuart Oulton	-3976
Office of the Auditor General Bureau du Vérificateur Général	Yves Godbout	-2243
Municipal Affairs and Environment Affaires Municipales et Environnement	Bill Morrison William Ayer	-2658 -2669
Natural Resources and Energy Ressources Naturelles et Énergie	Lyn Fairweather	-5598
Office of the Premier Cabinet du Premier Ministre	Rick Phillips	-2286

INFORMATION SYSTEM COORDINATORS
COORDINATEURS DE SYSTEMES INFORMATIQUES
NOVEMBER 1988 - NOVEMBER 1988

DEPARTMENT MINISTERE	COORDINATOR COORDINATEUR	'PHONE
Office of the Comptroller Bureau du Contrôleur	Pat Doherty	-2250
Occupational Health & Safety Commission Comm. de l'Hygiène et Sécurité au Travail	Edward Lenarczyk	-2467
Policy Secretariat Secrétariat des Politiques	Mike Wood	-2314
Regional Development Corporation Société d'Aménagement Régional	Gordon Gilman	-2277
Supply and Services Approvisionnement et Services	Marie-Ange Levesque	-3707
Tourism, Recreation and Heritage Tourisme, Récréation et Patrimoine	Dean Mundee	-2070
Transportation - Transport	Emilia Sousa	-2990

INFORMATION TECHNOLOGY CONFERENCE
CONFÉRENCE SUR L'INFORMATION TECHNOLOGIQUE

November 2-3, 1988

Les 2-3 novembre, 1988

Your input on the captioned conference is important. It will help the planning committee make the next conference even more useful to you. We would welcome your observations.

Thank you for taking the time.

Vos observations sur la conférence sont importantes. Elles aideront les organisateurs à rendre la prochaine conférence encore plus utile. Nous vous serions gré de nous les adresser.

Merci de votre temps.

- Were the contents of the presentations of practical use to you ?
  Retirerez-vous des bénifices pratiques de la teneur des présentations ?

_____

_____

- Did the presentations correspond to your expectations from the theme ?
  Les présentations fûrent-elles conformes à vos espérances du thème ?

_____

_____

- Were the demos varied enough and useful ?
  Les démos étaient-elles assez variées et utiles ?

_____

_____

- Were the facilities, documentation, timing... to your satisfaction ?
  Etes-vous satisfait(e)s de l' accommodation, de la documentation, du temps alloué... ?

_____

_____

- Do you think that one conference a year would be sufficient ?
  Pensez-vous qu'une seule conférence annuelle suffirait ?

_____

INFORMATION TECHNOLOGY CONFERENCE
CONFÉRENCE SUR L'INFORMATION TECHNOLOGIQUE

November 2-3, 1988 — Les 2-3 novembre, 1988

- *Do you have any suggestions or offers for the next conference ?*
  Avez-vous des suggestions ou offres de participation pour la prochaine conférence ?

AS PLANNING COMMITTEE MEMBER ?
COMME MEMBRE DU COMITÉ ORGANISATEUR ? _____

Dept./ Minist. _____

TOPIC / SUJETS _____

DEMOS / DÉMOS _____

FACILITIES / ACCOMODATIONS _____

OTHER / AUTRE _____

_____

COMMENTS / COMMENTAIRES :

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Please return to : André Gauthier, I. S. D., 287 King's Place, York Tower
S.v.p. retourner à : André Gauthier, D. S. I., 287 Place King, Tour York